

FIG. 1

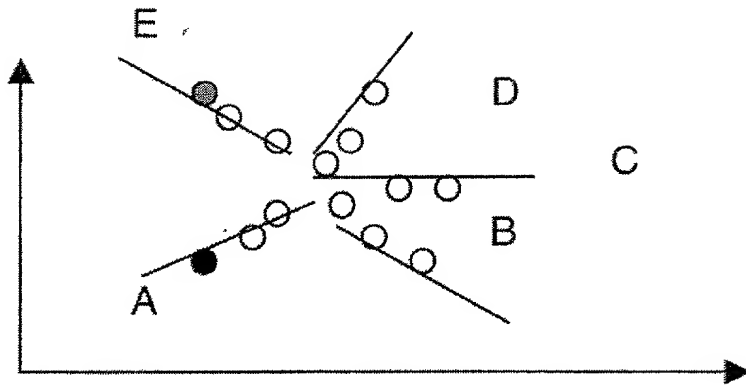


FIG. 2

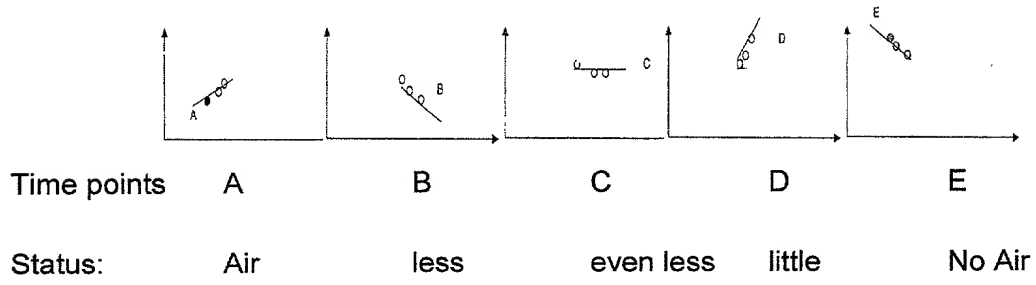


FIG 3

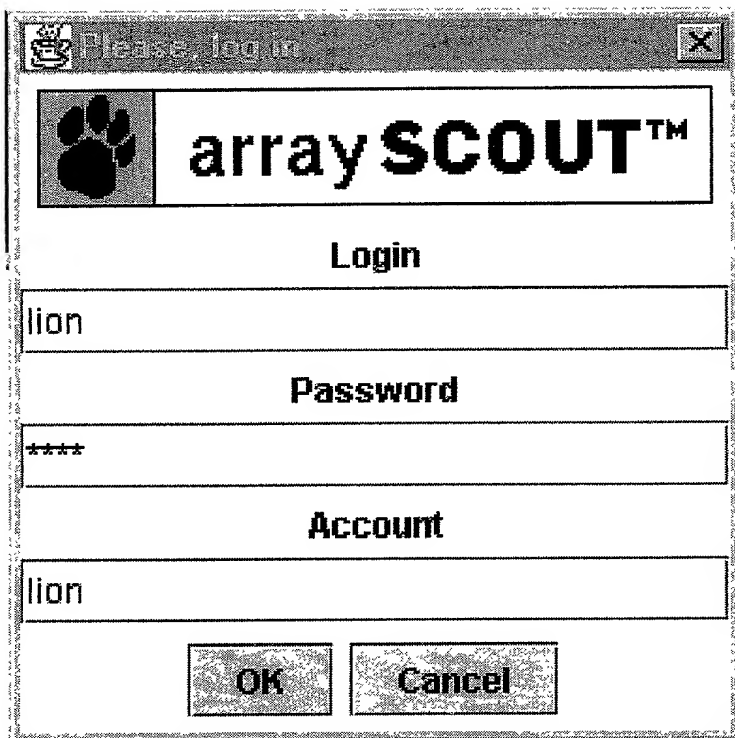


FIG. 4

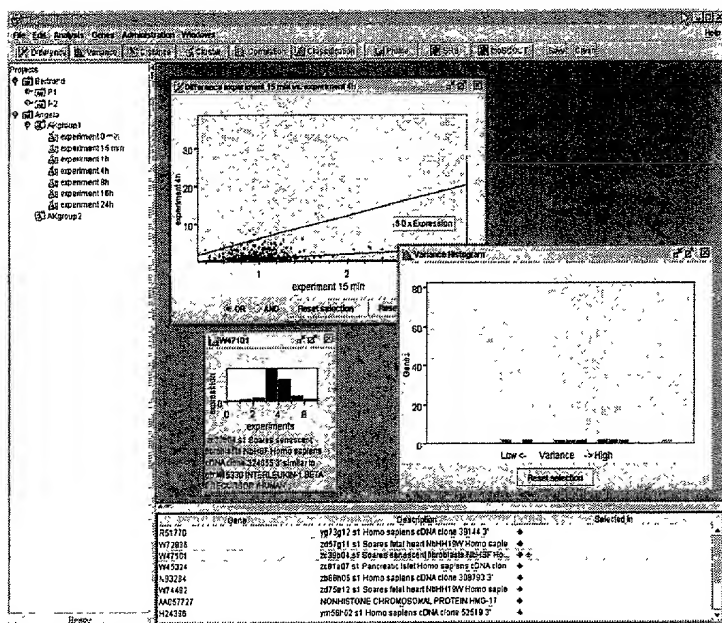


FIG. 5

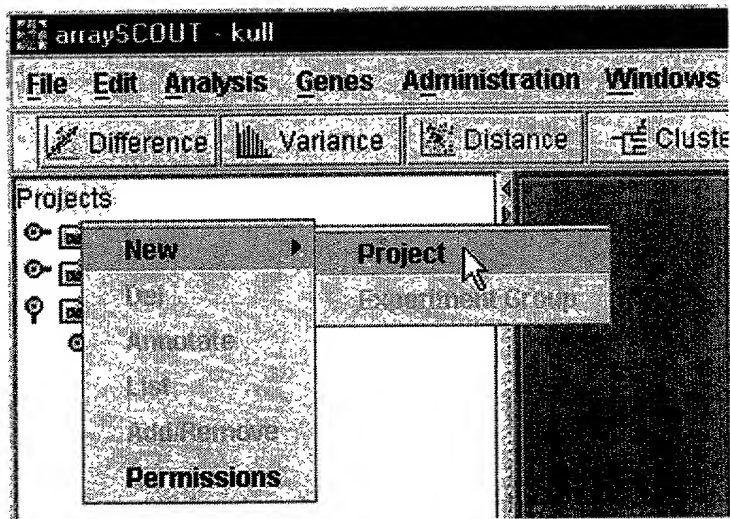


Fig. 6

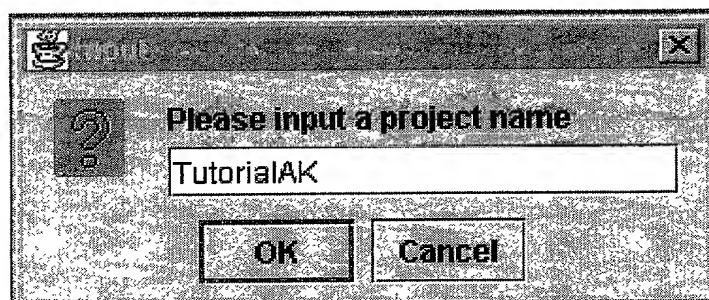


Fig. 7

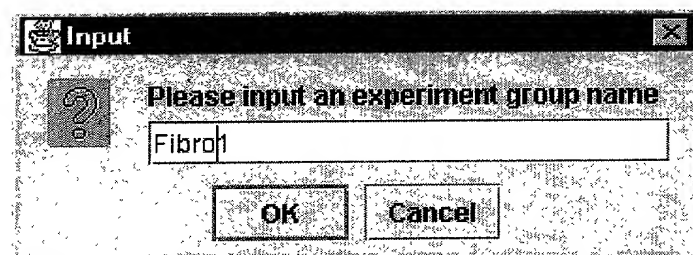


Fig. 8

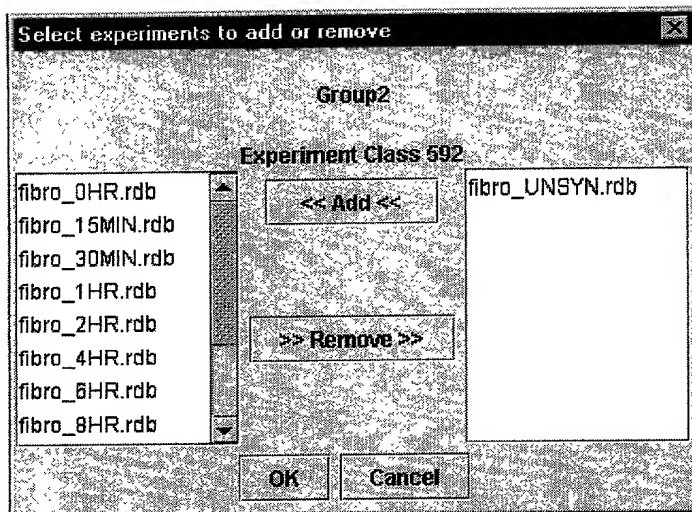


Fig. 9

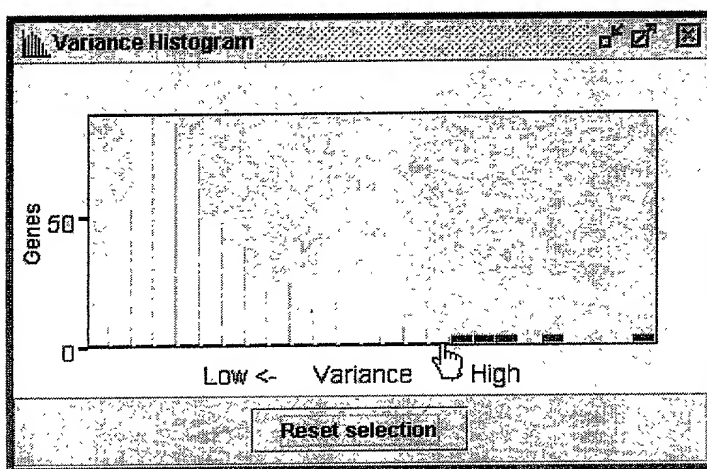


Fig. 10

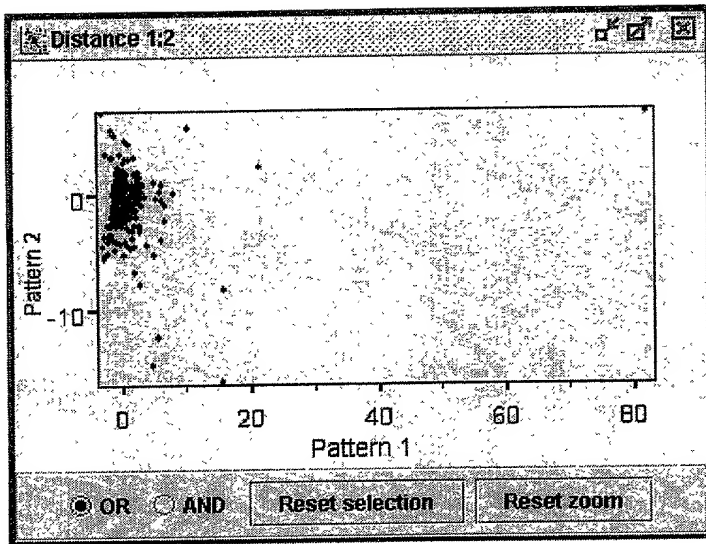


Fig. 11

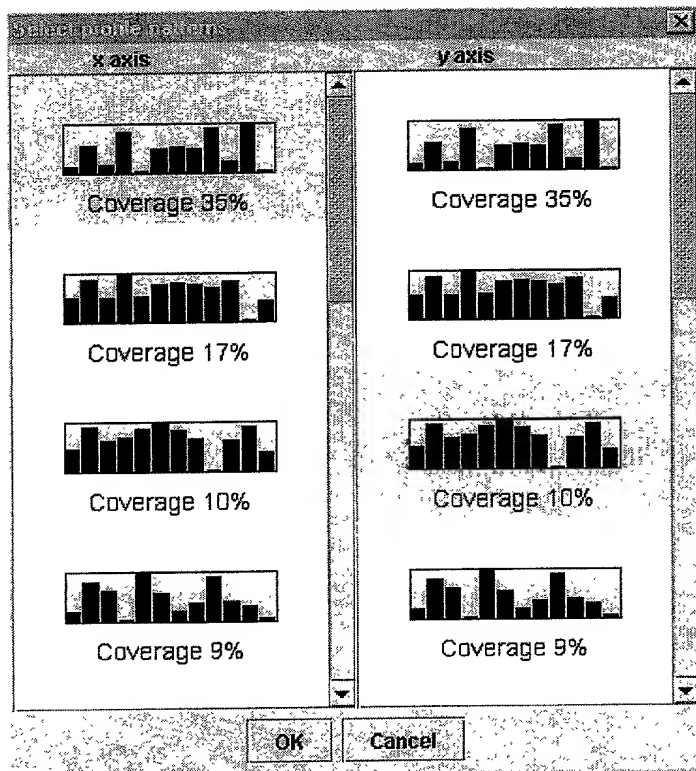


Fig. 12

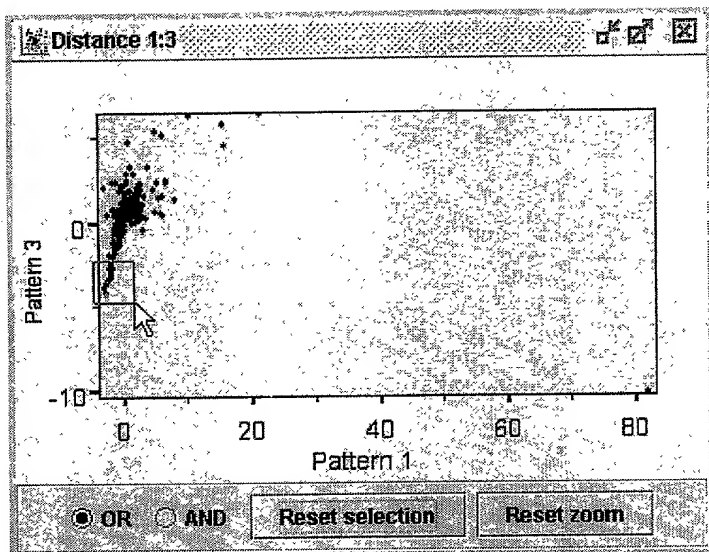


Fig. 13

Gene	Description	Selected in
W72758	zd71h04 s1 Soares fetal heart NbH-H19W Homo sapie	<input type="checkbox"/>
R40626	y72g12 s1 Homo sapiens cDNA clone 28051 3'	<input type="checkbox"/>
AA001918	zh83b05 s1 Soares fetal liver spleen 1NPL5 B1 Homo	<input type="checkbox"/>
R43729	yp20c12 s1 Homo sapiens cDNA clone 32811 3'	<input type="checkbox"/>
AA041370	z09a02 s1 Soares fetal heart NbH-H19W Homo sapie	<input type="checkbox"/>
T26837	ye42c02 s1 Homo sapiens cDNA clone 120386 3'	<input type="checkbox"/>
R27597	y81g03 s1 Homo sapiens cDNA clone 182772 3' simi	<input type="checkbox"/>
AA024572	ze72h08 s1 Soares fetal heart NbH-H19W Homo sapie	<input type="checkbox"/>

Fig. 14

SRS

Simple mode Submit Deselect

expert query

Q1

- Metabolic Pathways
- TransFac
- SeqRelated
- Sequence
 - ☐ EMBL
 - ☐ GENBANKNEW
 - ☐ PIR
 - ☐ TREMBLNEW
 - ☐ TREMBL
 - ☐ NACENESEQ
 - ☐ EMBLNEW
 - ☐ SWISSPROT
 - ☐ SPTREMBL
 - ☐ GENPEPT
 - ☐ SPTREMBLNE

Fig. 15

Q1

ys

EW

W

D

☐ EMBLNEW
 ☐ GENBANK

☐ SWISSPROT
 ☐ SWISSNEW

☐ SPTREMBL
 ☐ REMTREMBL

☐ GENPEPT
 ☐ GENPEPTNEW

☐ SPTREMBLNEW
 ☐ AAGENESEQ

Description cyclin

Fig. 16

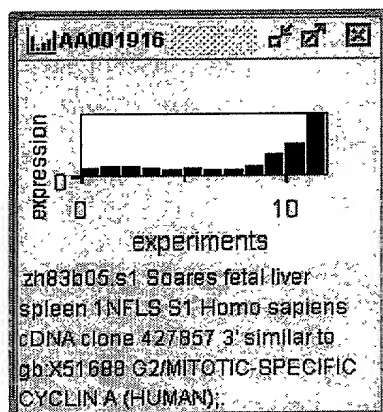


Fig. 17

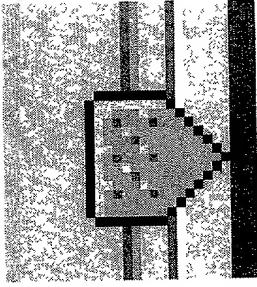


Fig. 18

Scale Tab

FOOTNOTES

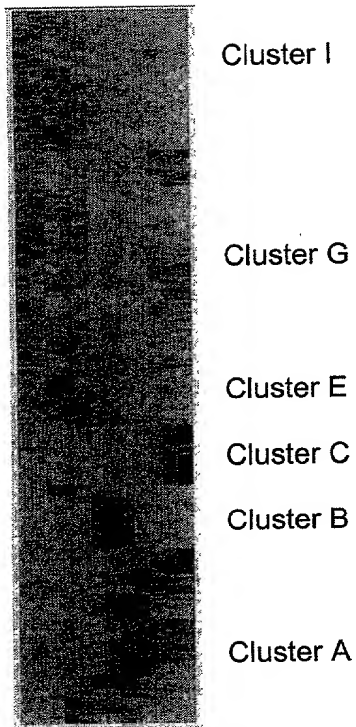


Fig. 19

Projects





-  Bertrand
-  fibroblast data
-  Fibroblast Project
-  Illico Presto

Fig. 20







-  Experiment group 1
 -  experiment 0 min
 -  experiment 15 min
 -  experiment 30 min
 -  experiment 1 h
 -  experiment 2h

Fig. 21

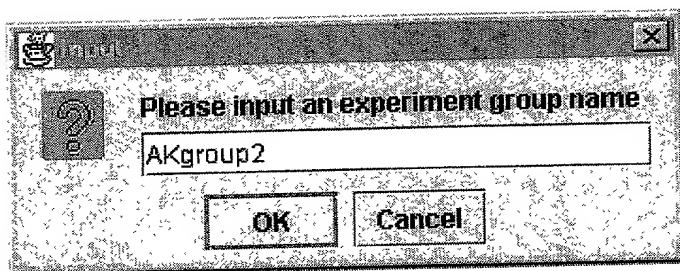


Fig. 22

Experiment group name dialog box.

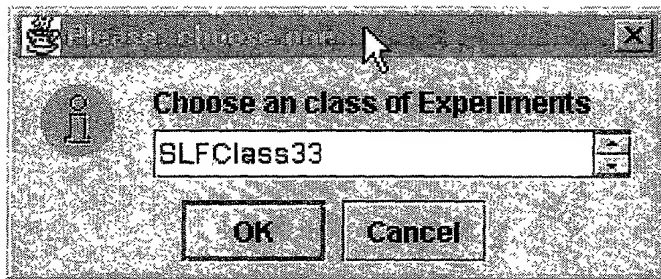


Fig. 23

Choose experiment class dialog box.

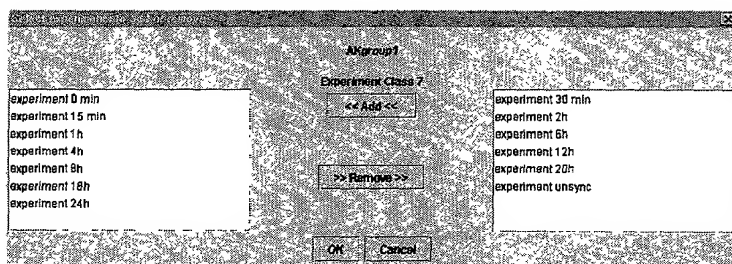


Fig. 24

Add/Remove dialog box for adding and removing experiments from experiment groups.

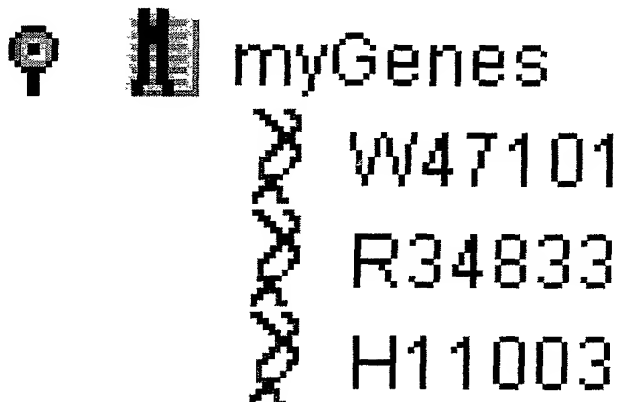


Fig. 25

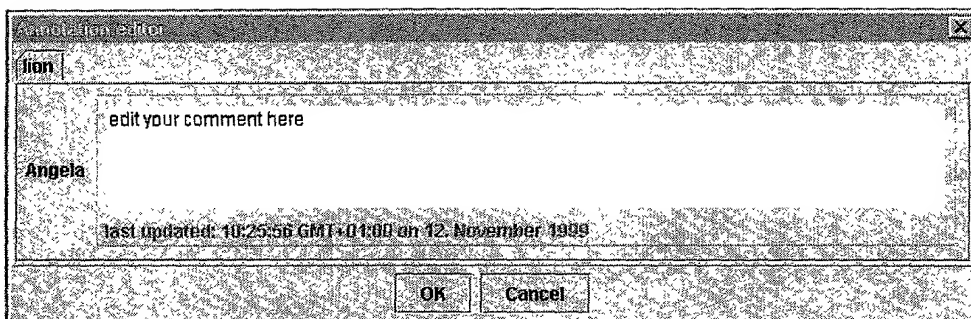


Fig. 26

The annotation editor.

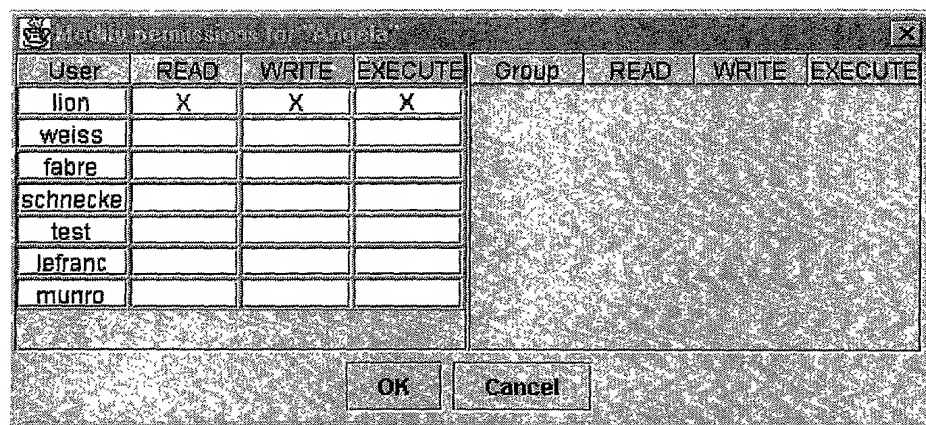


Fig. 27

The permissions dialog box for project "Angela".

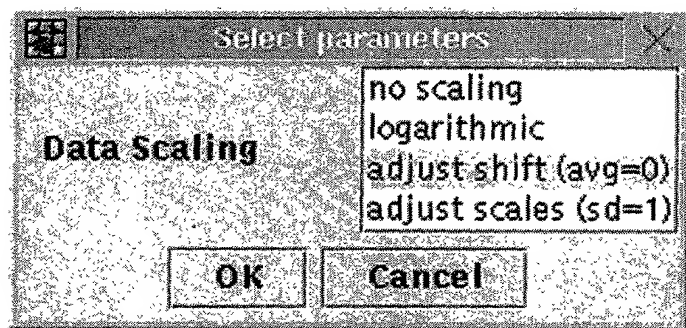


Fig. 28

Select parameters "Data Scaling" dialog box.

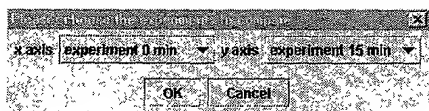


Fig. 29

The Choose experiments dialog box.

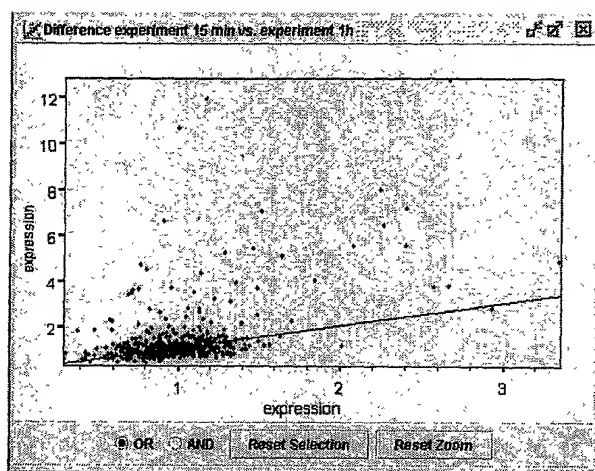


Figure 30

An example difference plot.

0975429.012001

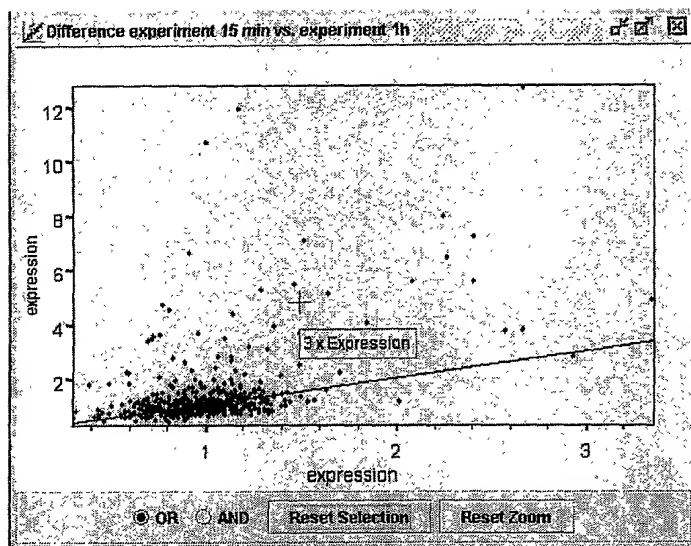


Fig. 31

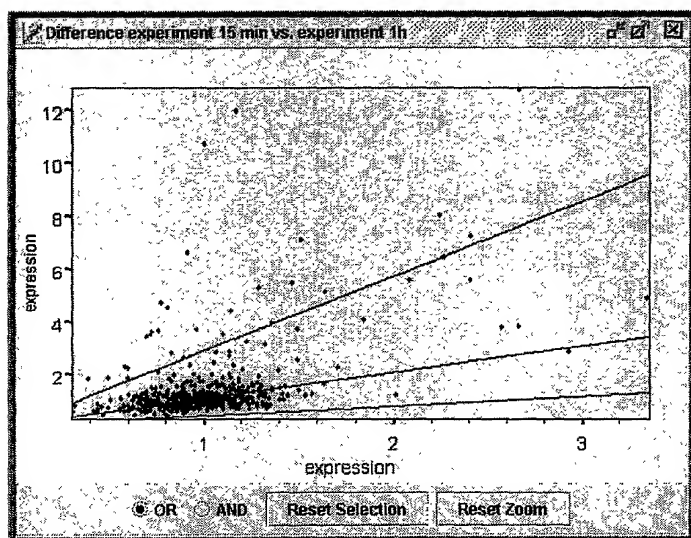


Fig. 32

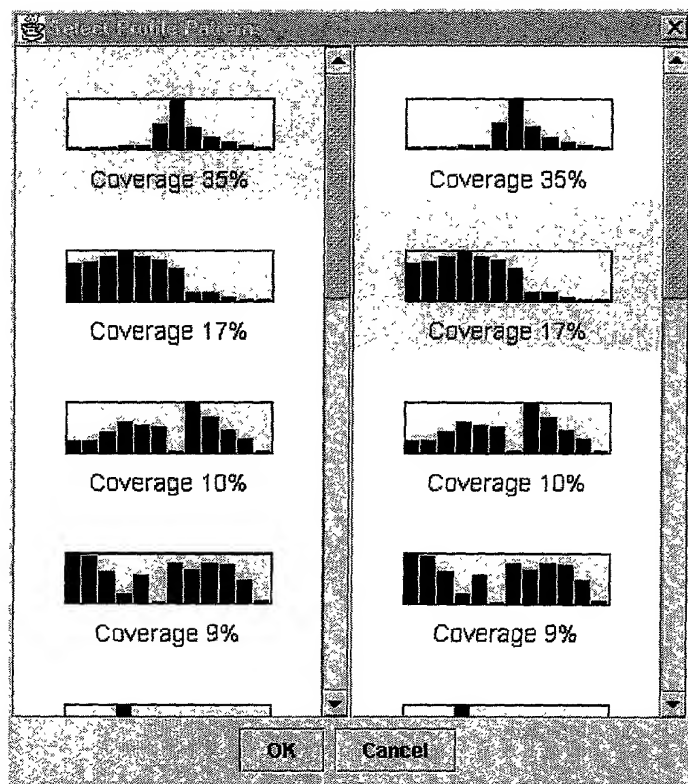


Fig. 33

Select Profile Patterns dialog box.

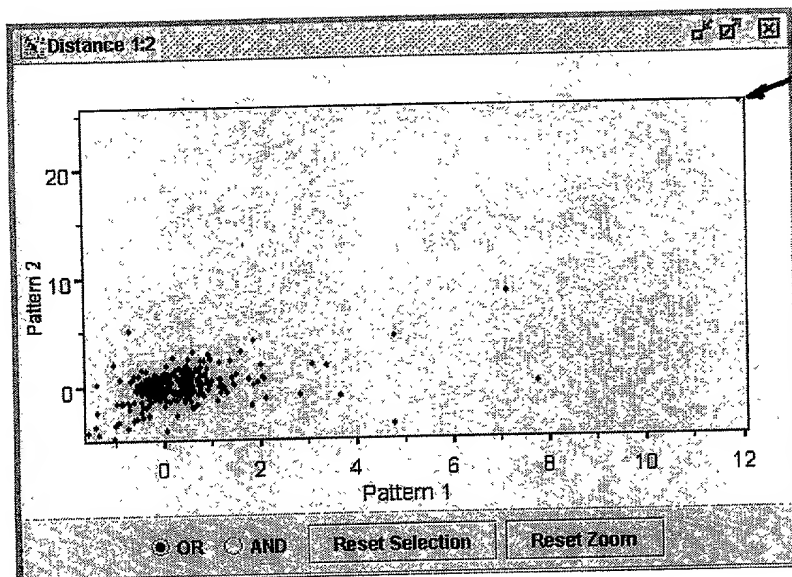


Figure 34

Gene profiled in Fig. 4.5

Distance Plot created with the adjust shift (avg=0) scaling procedure and the patterns displayed in Fig. 4.3.

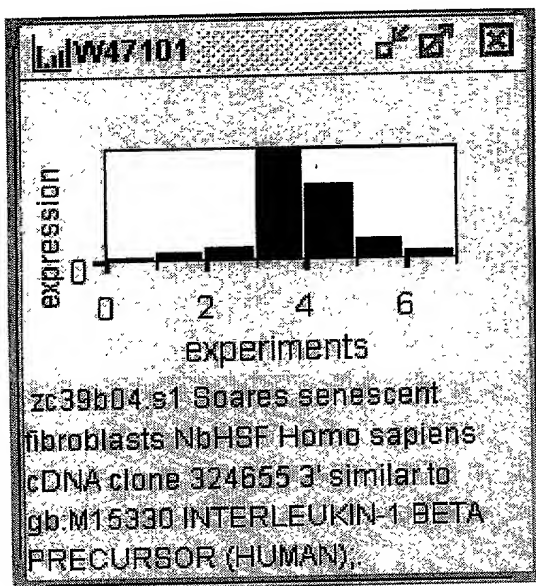


Figure 35

Gene Profile of gene W47101 plotted at (12,26) in the above Distance Plot (Figure).

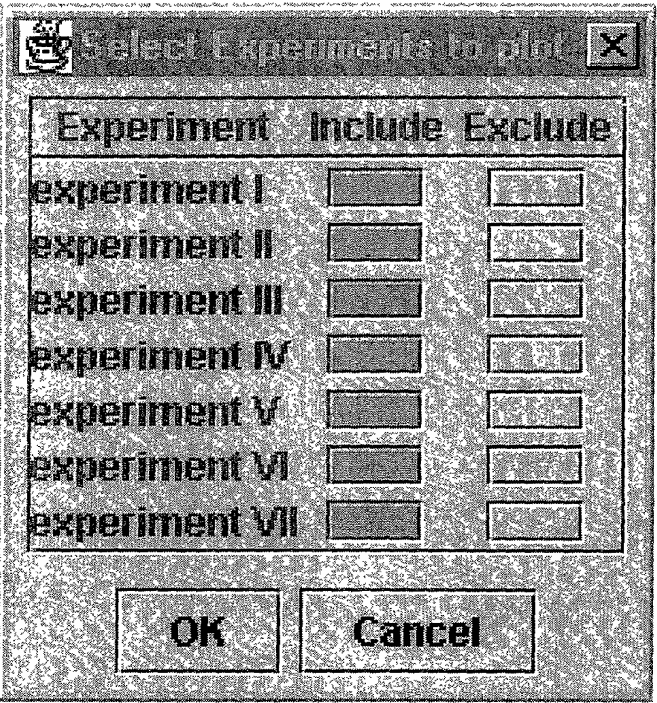


Figure 36

The "Select Experiments to plot" dialog box for the variance histogram.

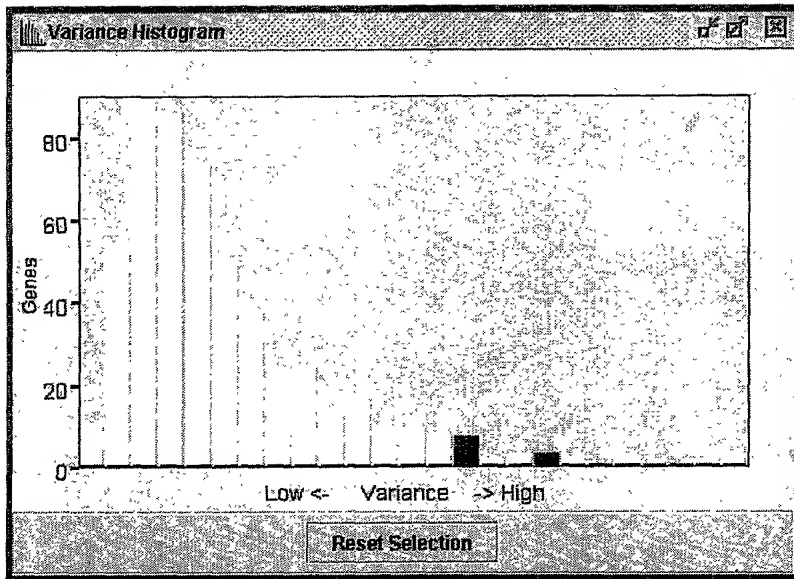


Fig. 37

The Variance Histogram with two bars selected.

Experiment	Target Value
experiment 0 min	1
experiment 15 min	1
experiment 30 min	1
experiment 1 h	1
experiment 2h	1
experiment 4h	1
experiment 6h	1
experiment 8h	1
experiment 12h	10.0
experiment 16h	1
experiment 20h	1
experiment 24h	1

Fig. 38

The "Enter Correlation Values" dialog box.

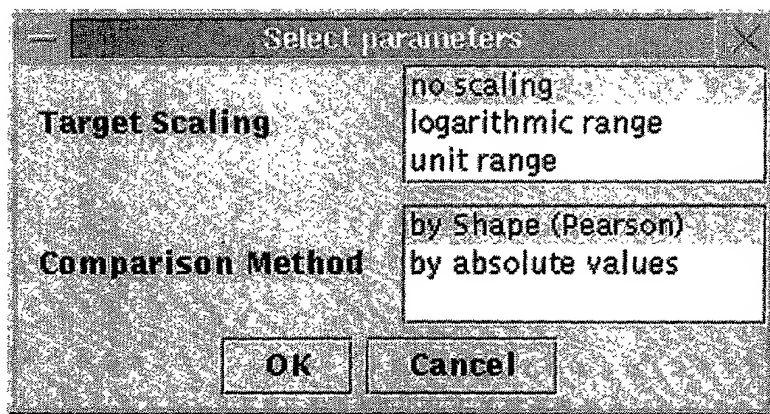


Fig. 39

Correlation histogram parameters dialog box.

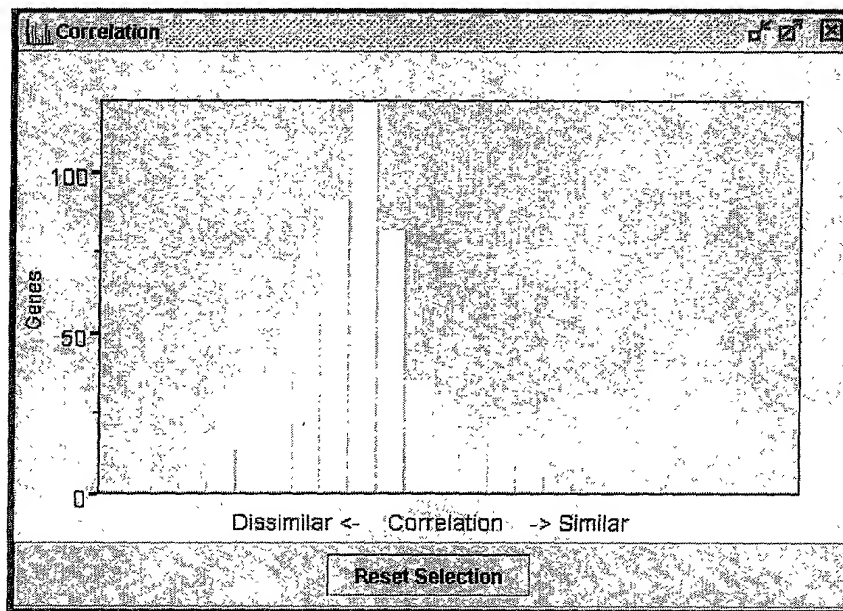


Fig. 40

A correlation histogram created using the "no scaling" and the "by Shape (Pearson)" parameters.

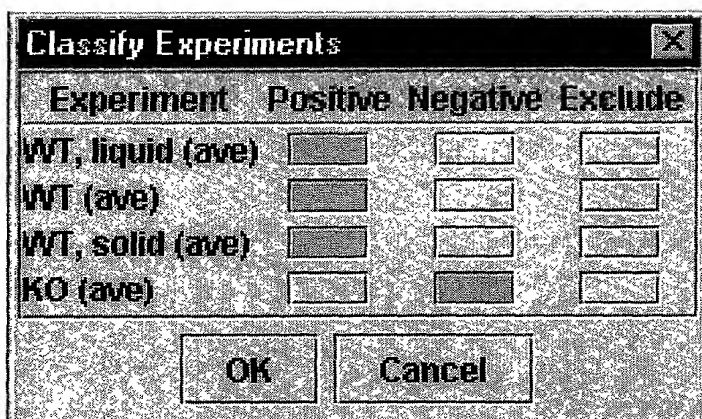


Fig. 41

The "Classify Experiments" dialog box.

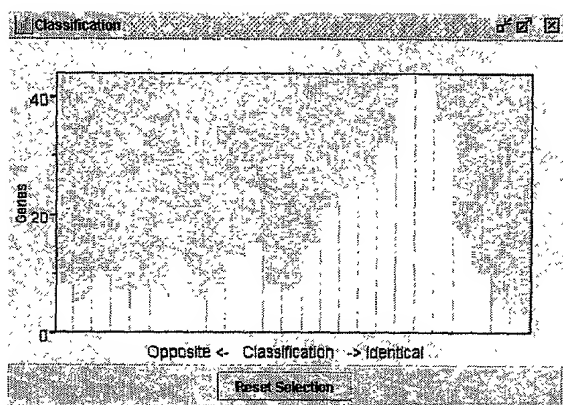


Figure 42

The Classification histogram created using the "adjust scales" scaling procedure and the data displayed in the "Classify Experiments" dialog box above (Figure).

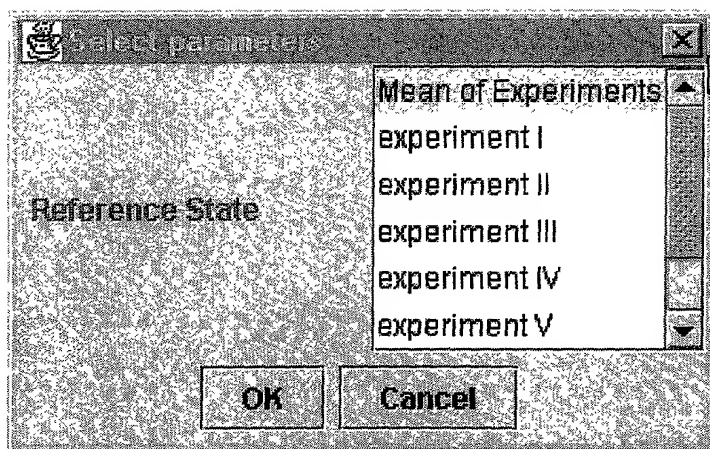


Fig. 43

Select reference state dialog box.

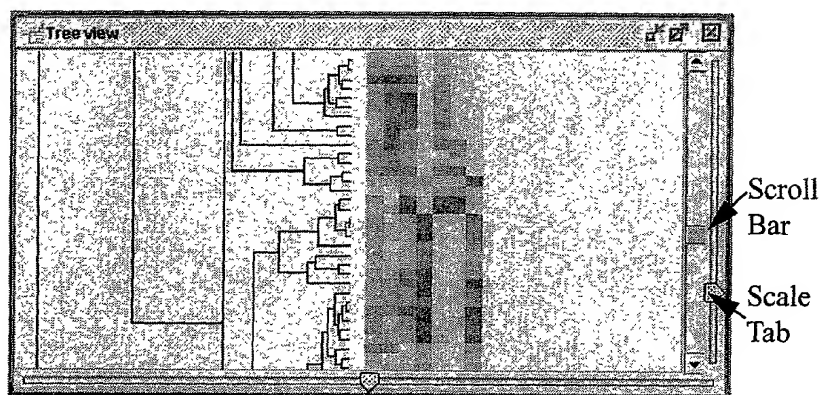


Figure 44

The Cluster Tree analysis view.

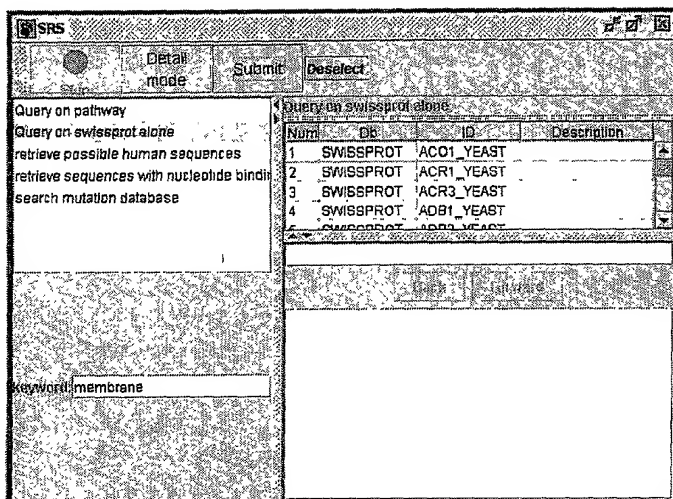


Fig. 45

The SRS Interface, in Simple Mode.

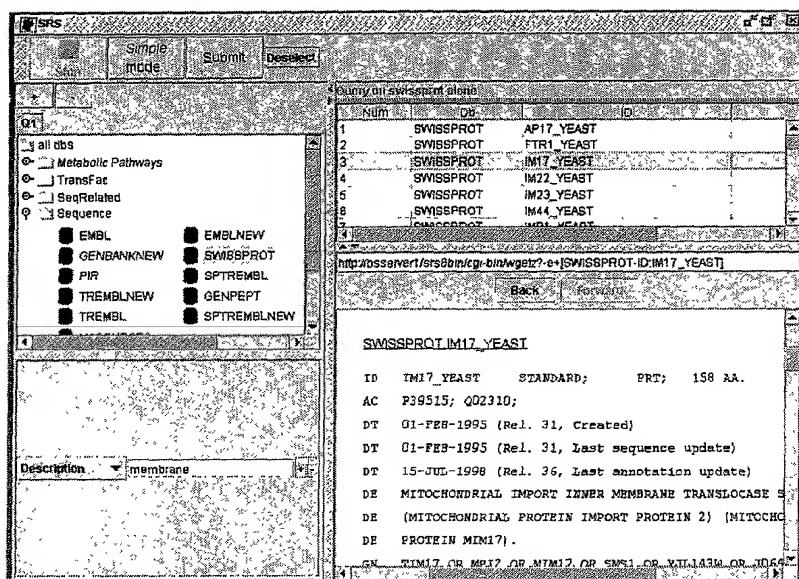


Fig. 46

The software SRS Interface in Detail Mode displaying a completed query and a database entry.

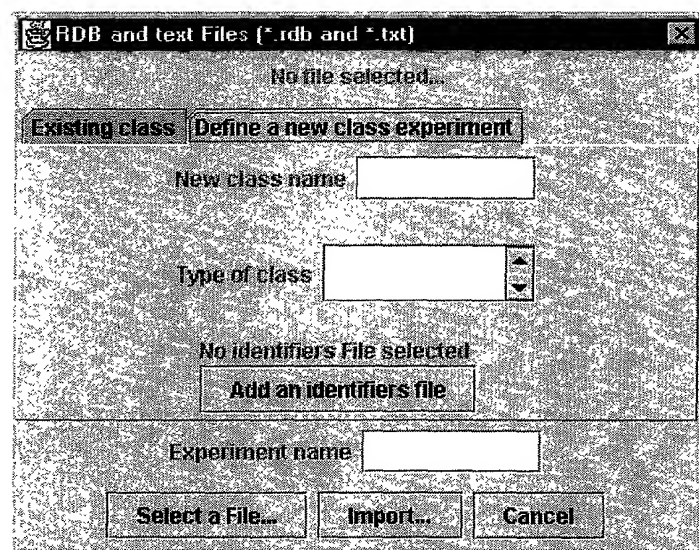


Fig. 47

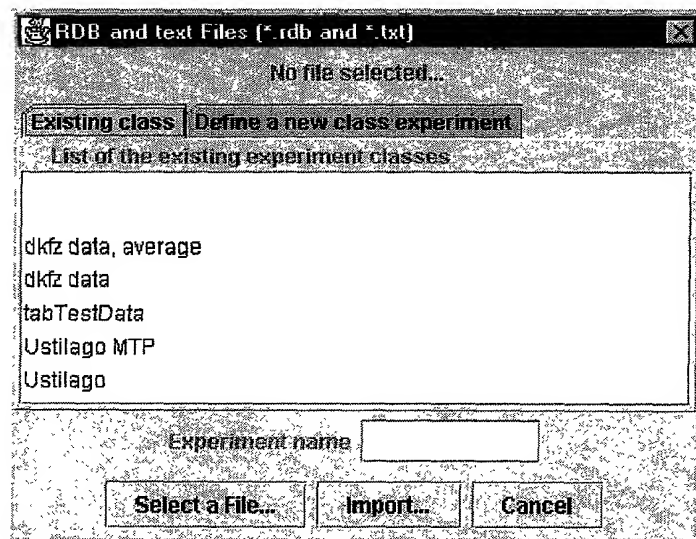


Fig. 48

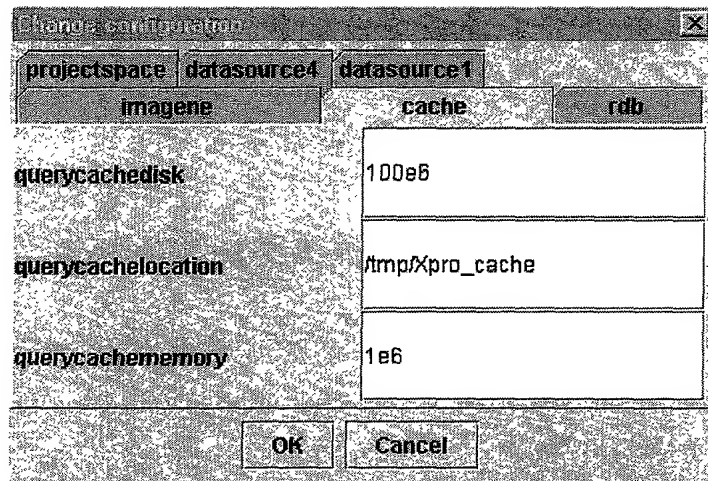


Figure 49

Change configuration dialog box.

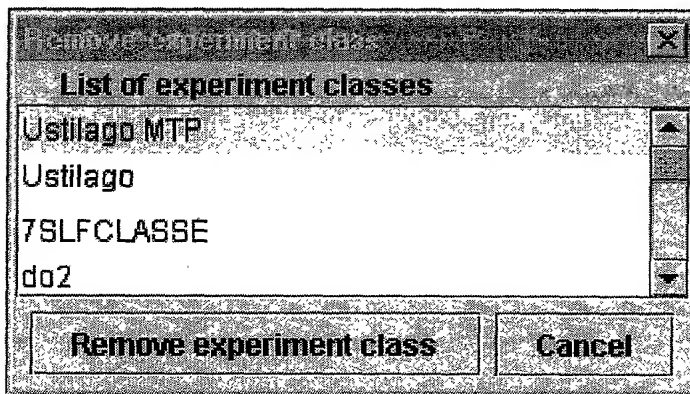


Fig. 50

Remove experiment class dialog box.

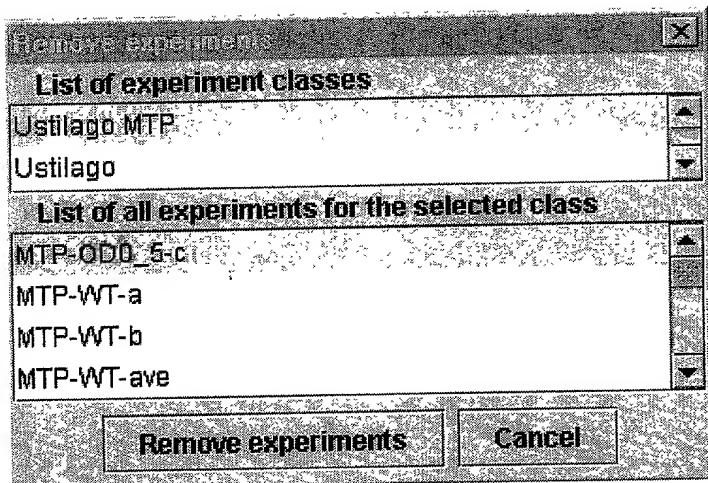


Fig. 51

Remove experiments dialog box.

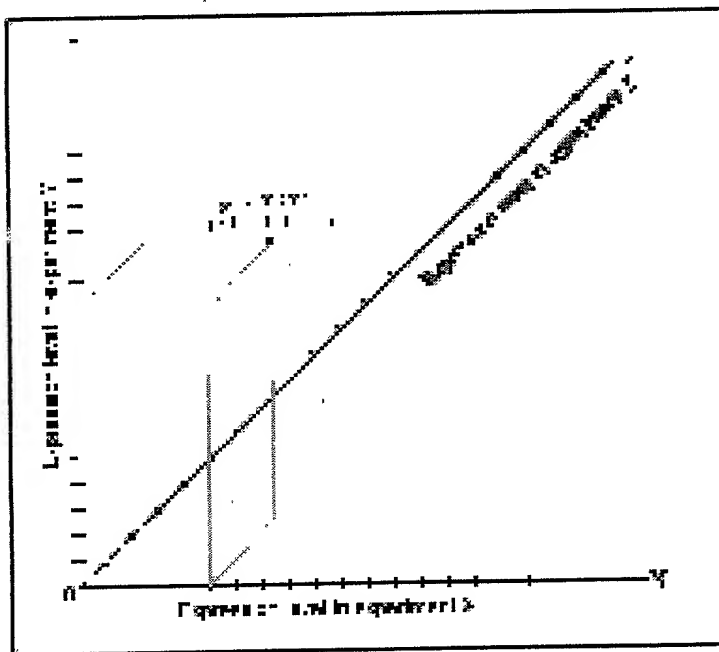


Fig. 52

A point (gene) plotted in three dimensions.

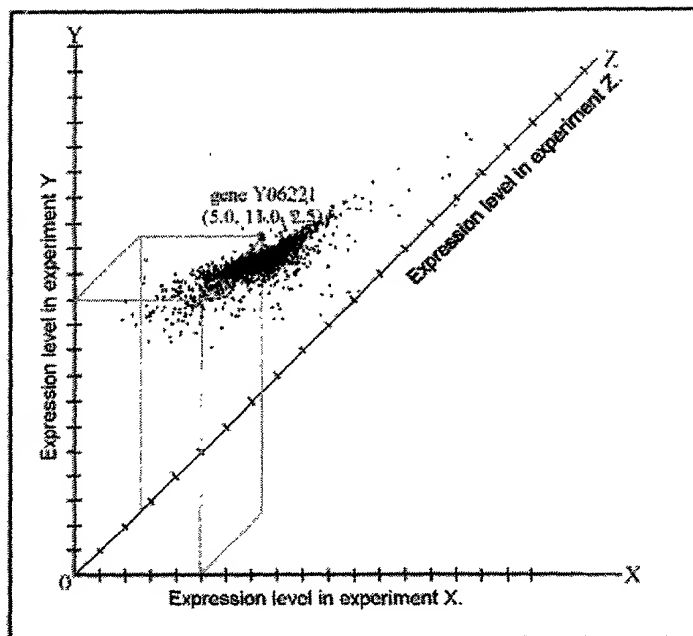


Fig. 53

Three experiments plotted in 3 dimensions.

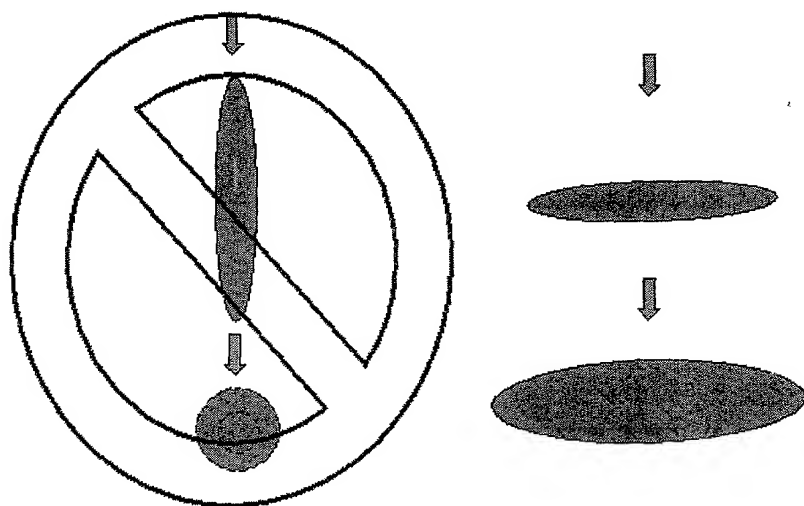
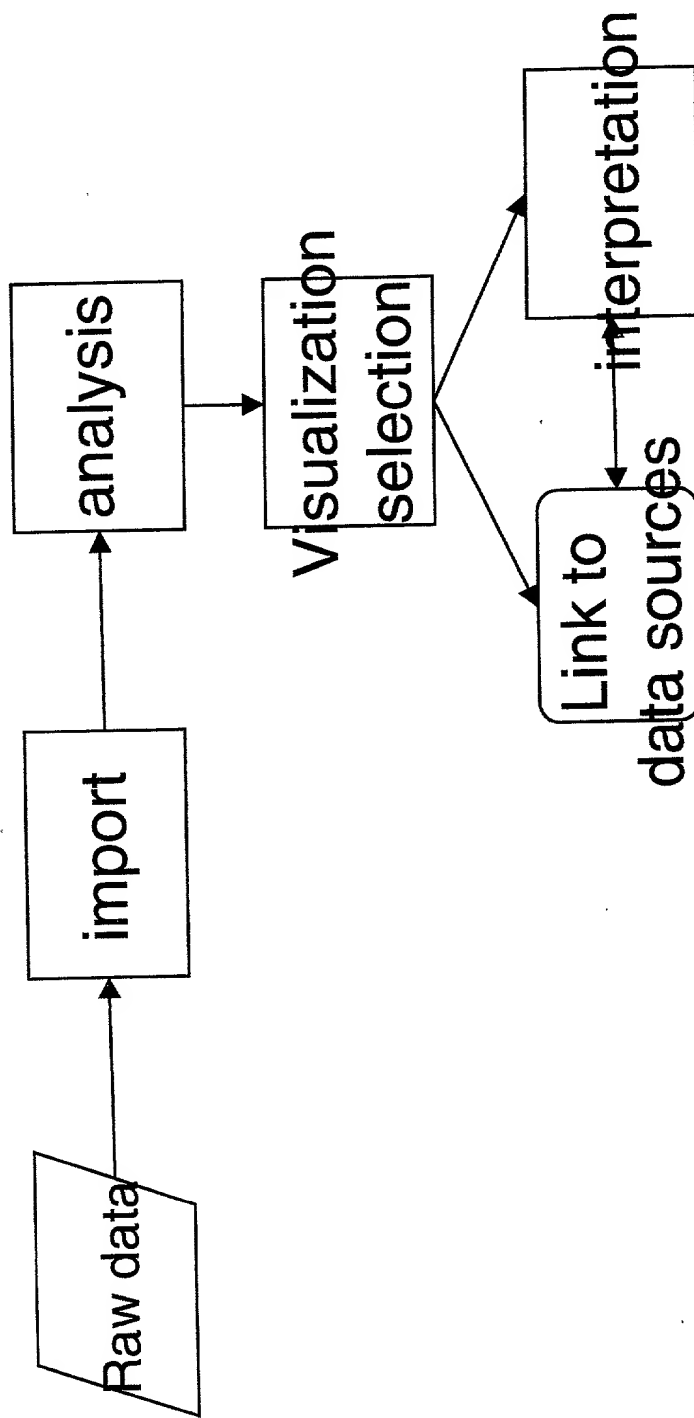


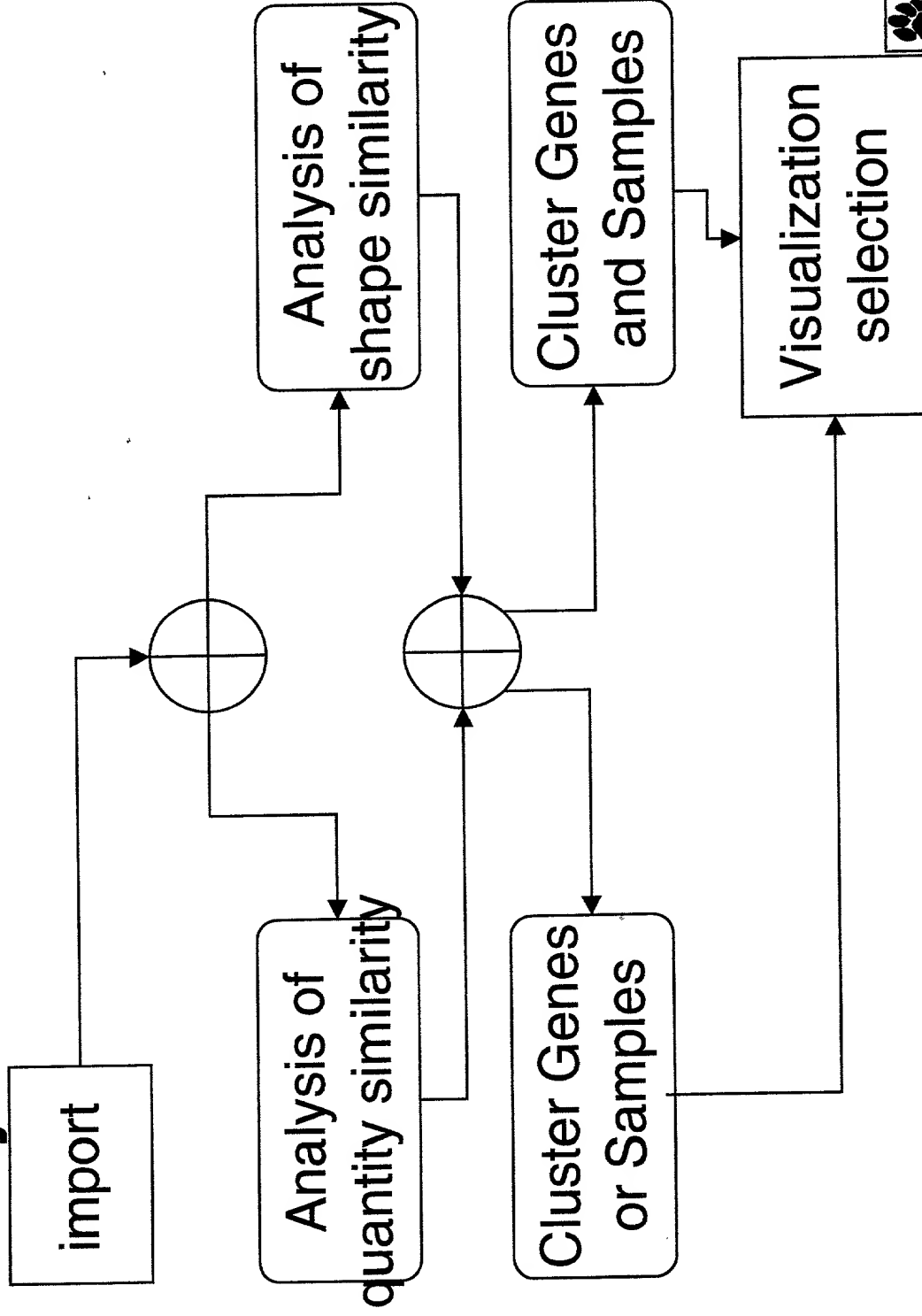
Fig. 54

Squash the cigar along its side to best preserve its shape.

General flow chart array analysis



Analysis of several uncharacterized samples



Analysis of characterized sets of samples

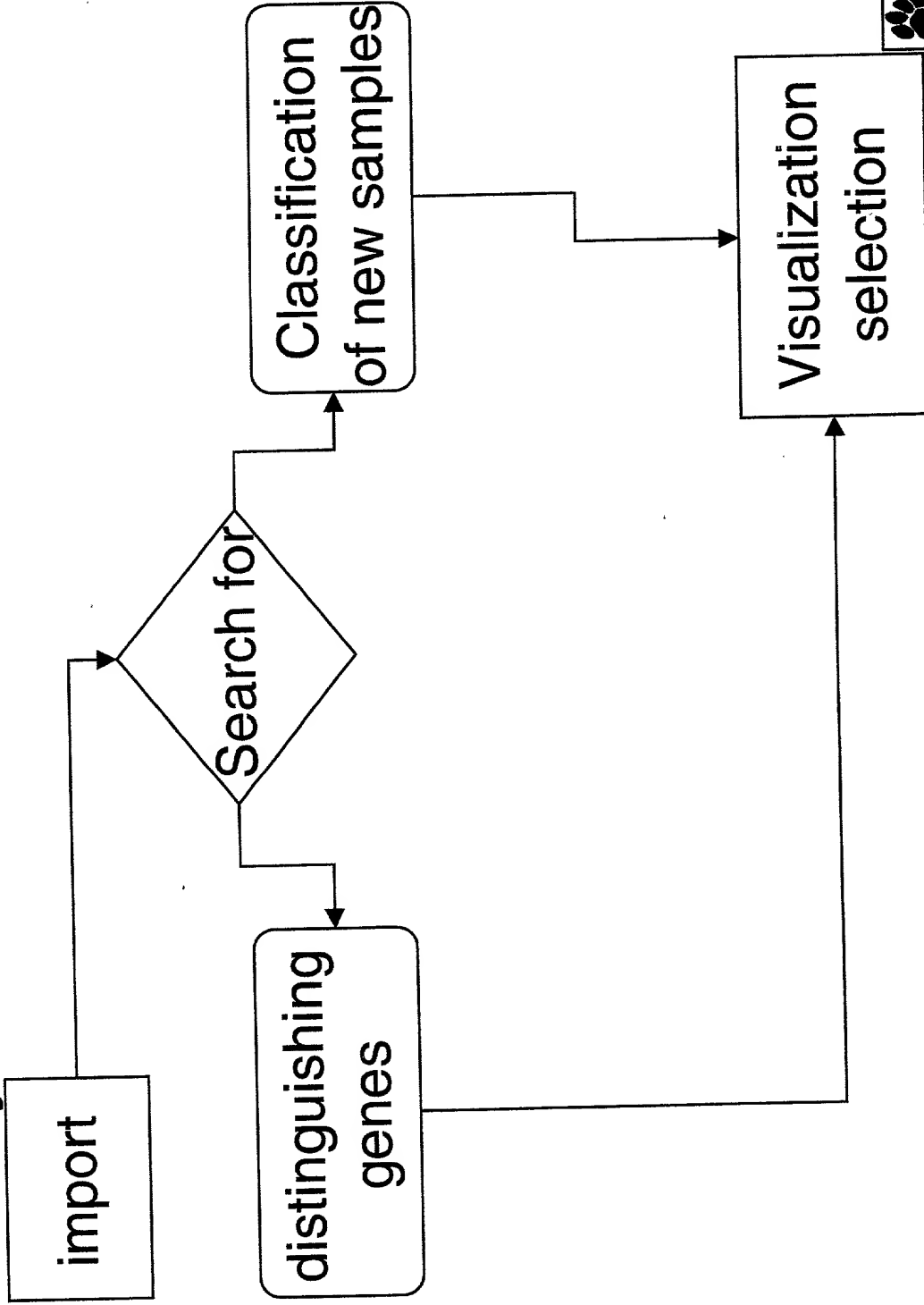
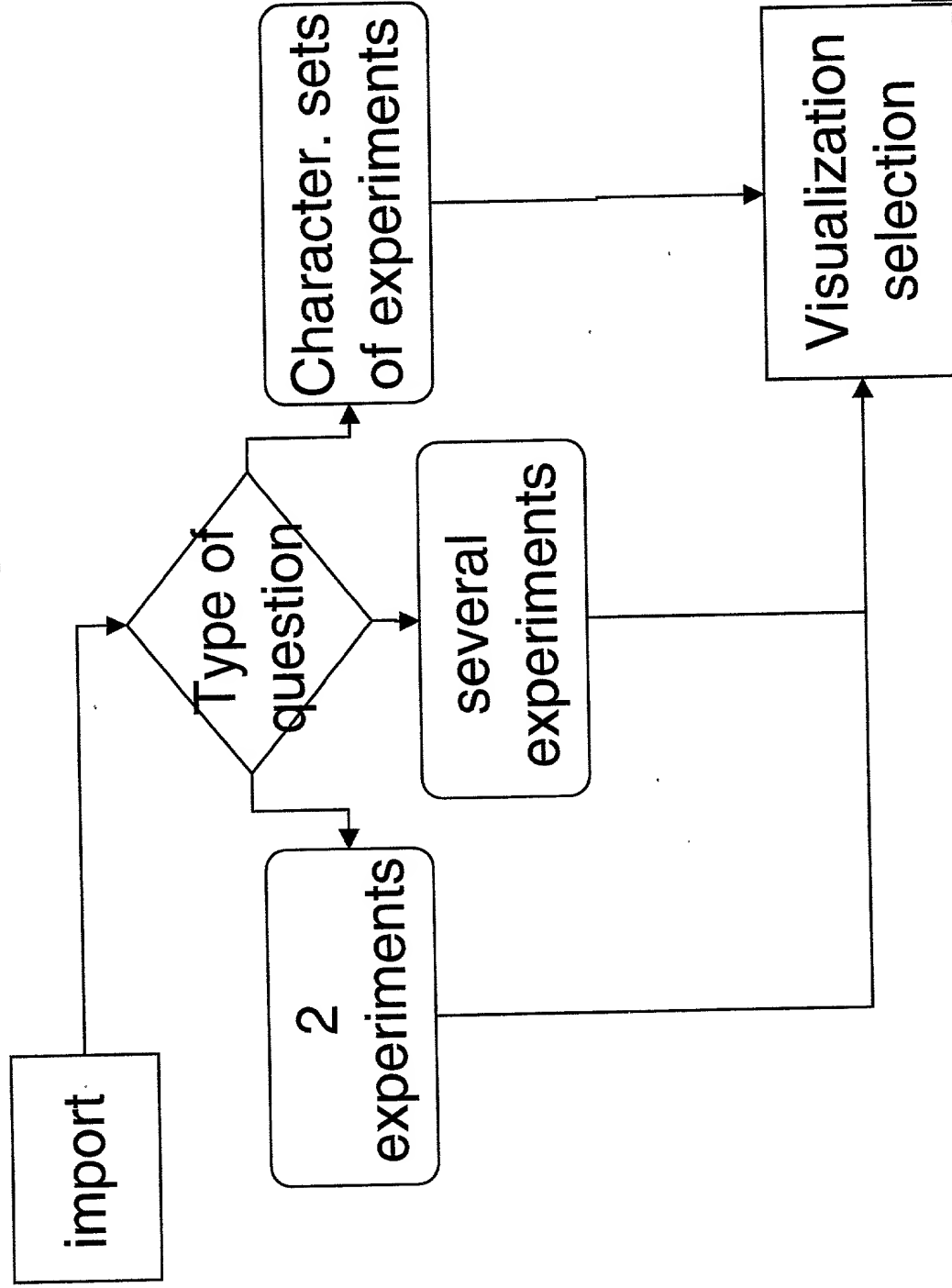
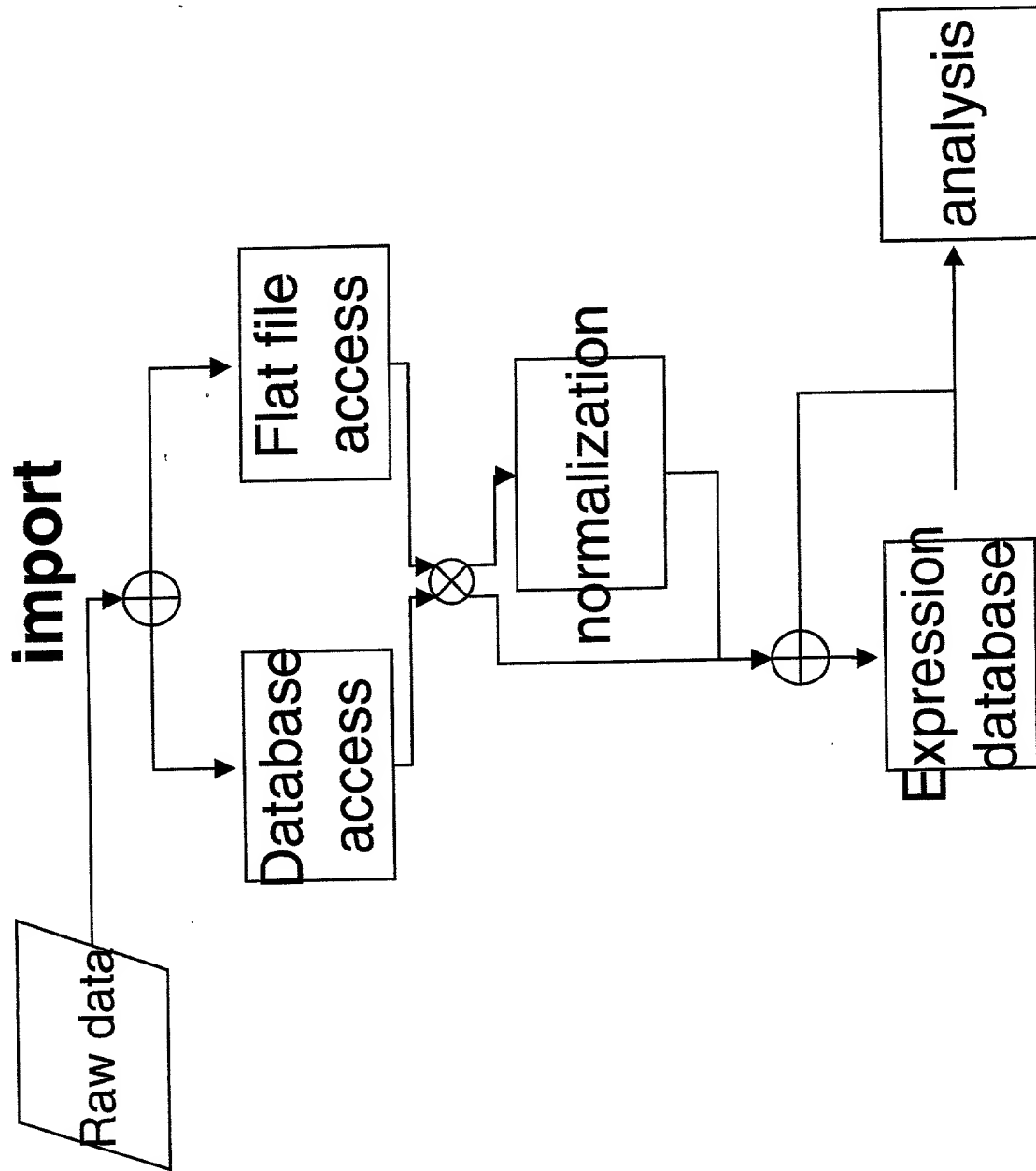


Fig. 57

Analysis





simultaneous analysis of Gene and Sample similarity

Data = X

- Singular value decomposition based

import

no More genes than samples? yes

Similarity matrix of genes $(X \cdot X^T) = S$

Gene

SVD of S

coordinates = $\lambda \cdot \text{eigenvector } V$

Similarity matrix of samples $(X \cdot X^T) = S'$

Sample

SVD of S'

coordinates = $\lambda \cdot \text{eigenvector } V'$

Sample

coordinates = $(1/\lambda) \cdot X \cdot \text{eigenvector } V$

" (1/λ) · X · eigenvector V

Gene

coordinates = $\lambda \cdot X^T \cdot \text{eigenvector } V'$

" λ · X^T · eigenvector V'

Visualization selection

FIG. 60



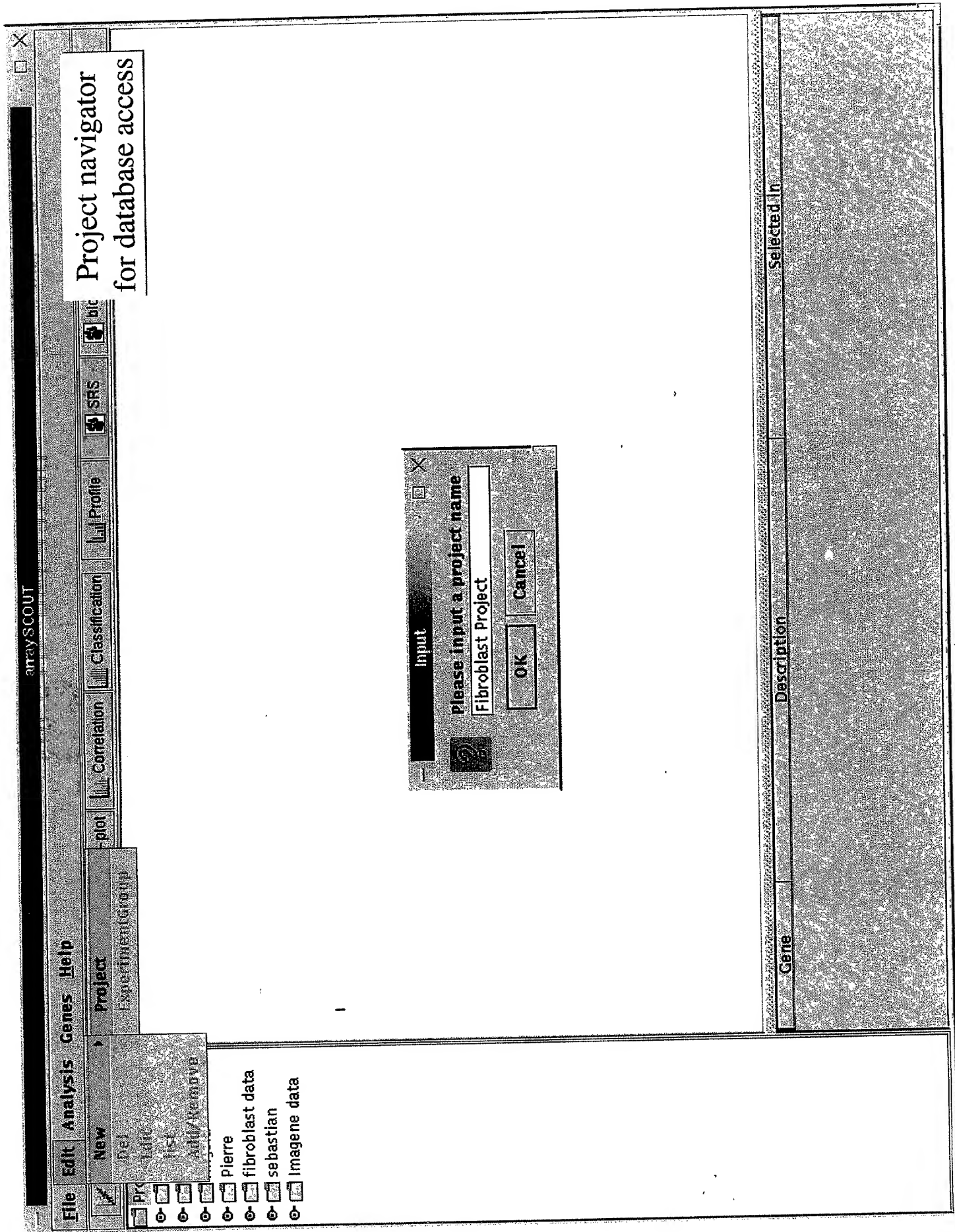


FIG. 61

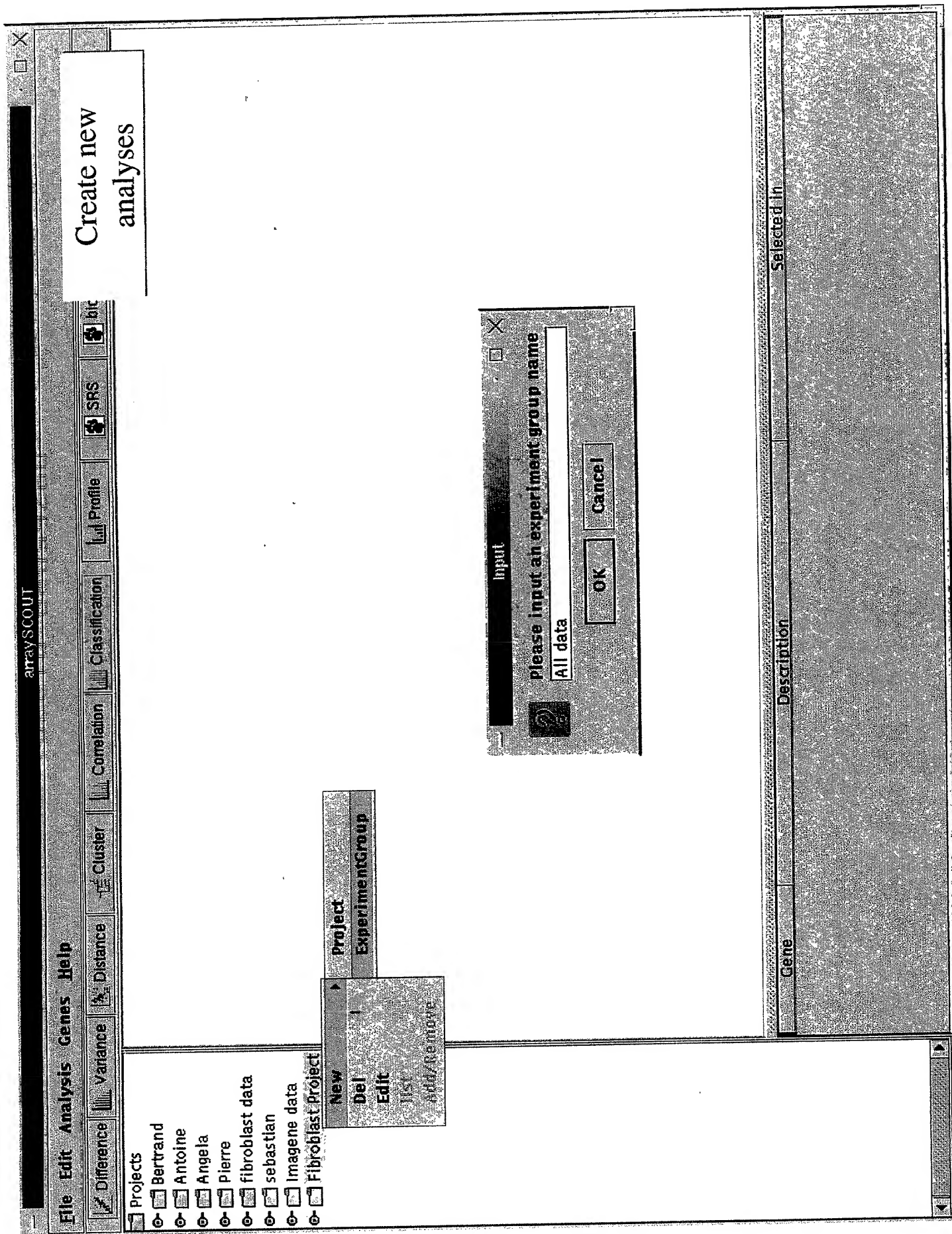


FIG. 62

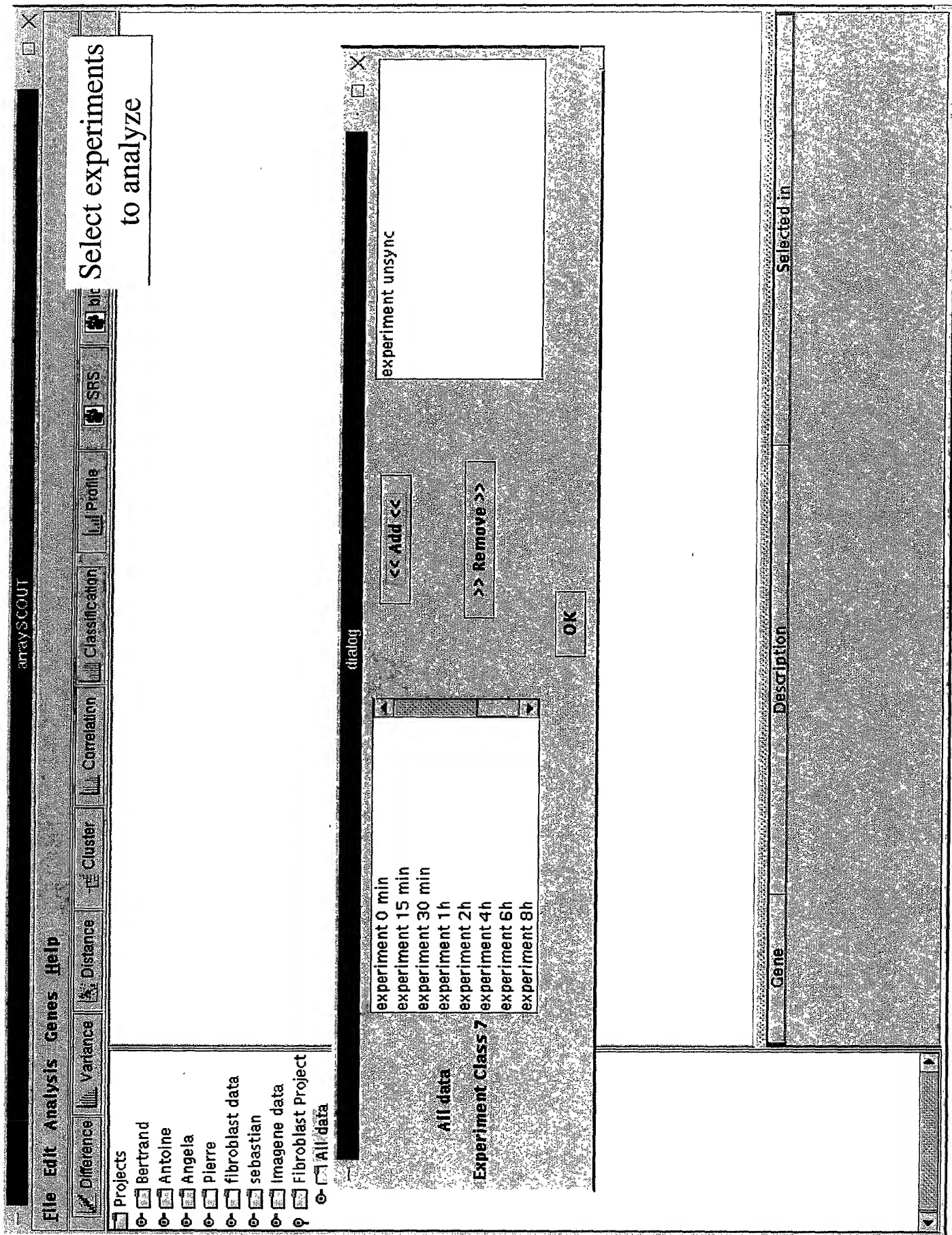


FIG. 63

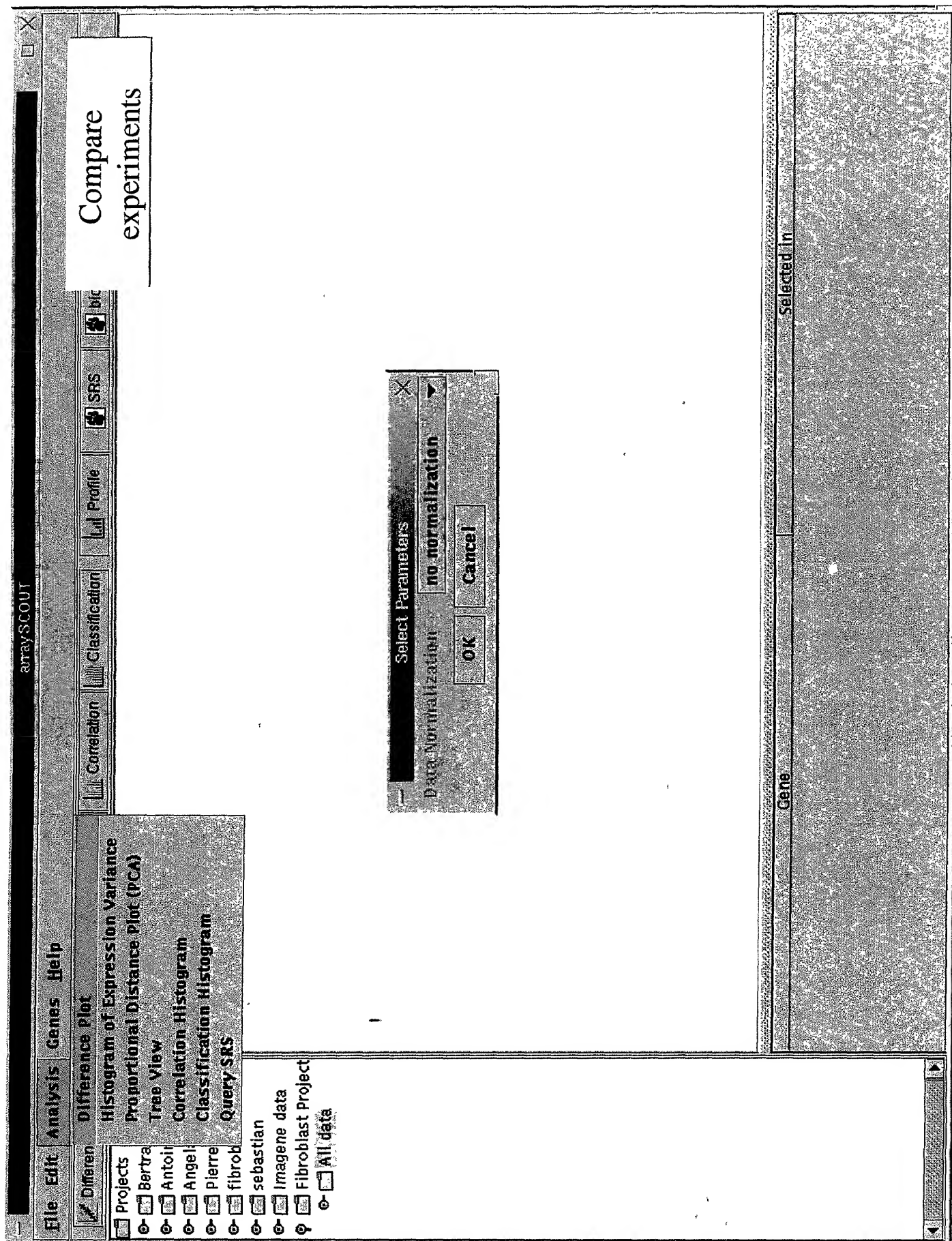


FIG. 64

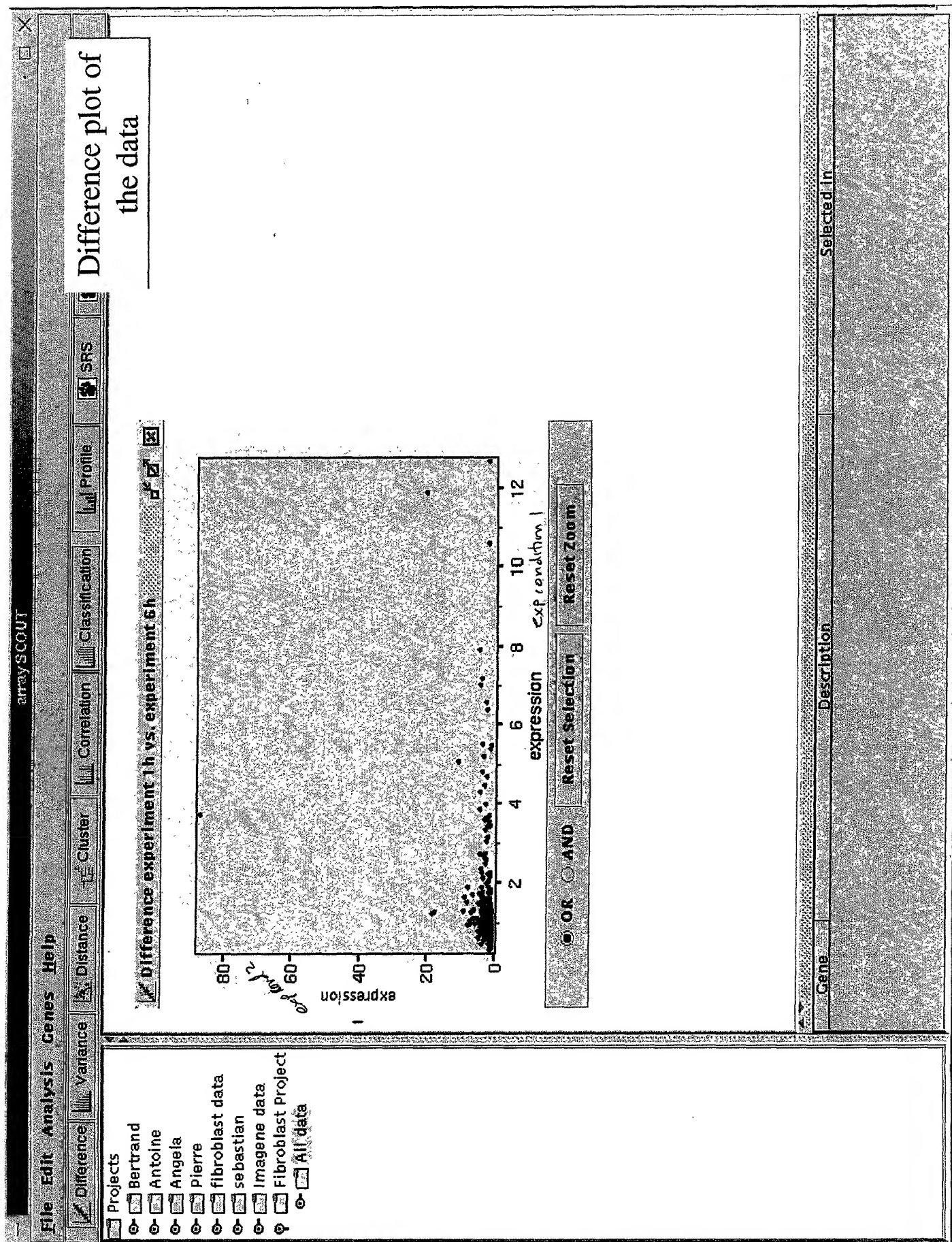


Fig. 5

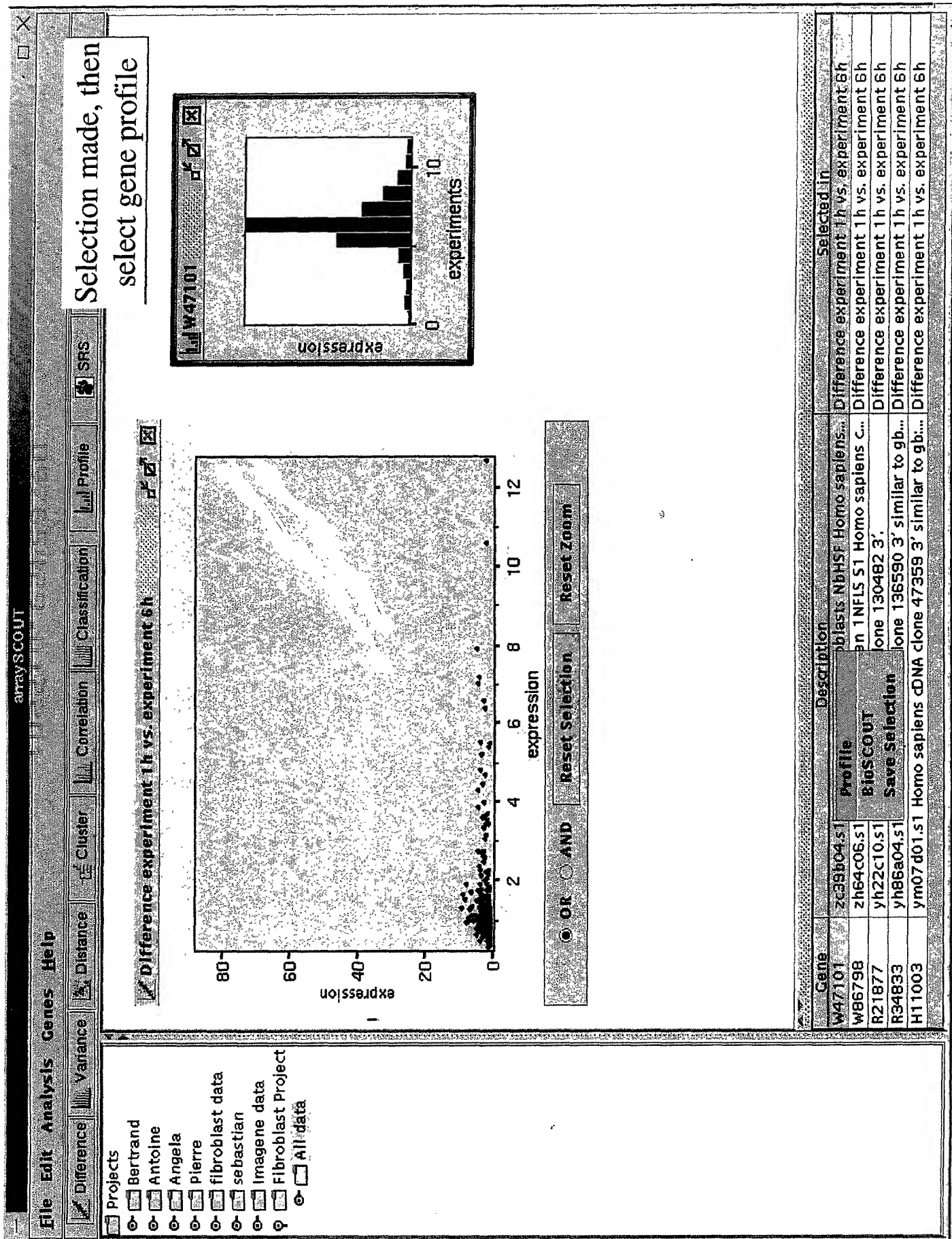
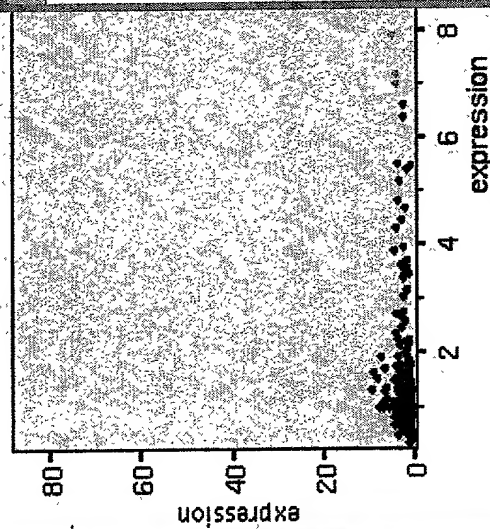


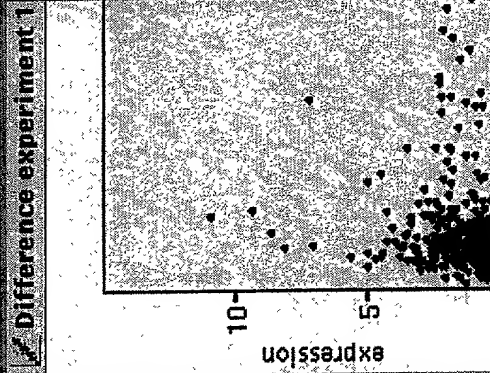
Fig. 66

Display and select within
other views on the data

Projects

- ☒ Bertrand
- ☒ Antoine
- ☒ Angela
- ☒ Pierre
- ☒ fibroblast data
- ☒ sebastian
- ☒ Image data
- ☒ Fibroblast Project
- ☒ All data

☒ Difference experiment 1 h vs. experiment 6 h ☒

☒ OR ☐ AND ☐ AND


☒ OR ☐ AND ☐ AND

T95837



Gene	Description	Selected in
T95837	ye42c02.s1 Homo sapiens cDNA clone 120386 3'	Difference experiment 1 h vs. experiment 12 h
H27557	y161g03.s1 Homo sapiens cDNA clone 162772 3' similar to ...	Difference experiment 1 h vs. experiment 12 h
W47101	z39b04.s1 Soares senescent fibroblasts NbHSF Homo sapie...	Difference experiment 1 h vs. experiment 6 h
W86798	zh64c06.s1 Soares fetal liver spleen 1NFLS S1 Homo sapien...	Difference experiment 1 h vs. experiment 6 h
R21877	yh22c10.s1 Homo sapiens cDNA clone 130482 3'	Difference experiment 1 h vs. experiment 6 h
R34833	yh86a04.s1 Homo sapiens cDNA clone 136590 3' similar to ...	Difference experiment 1 h vs. experiment 6 h
H11003	ym07d01.s1 Homo sapiens cDNA clone 47359 3' similar to ...	Difference experiment 1 h vs. experiment 6 h
AA016304	ze38d08.s1 Soares retina N2b4HR Homo sapiens cDNA clon...	Difference experiment 1 h vs. experiment 12 h
W88807	zh71b12.s1 Soares fetal liver spleen 1NFLS S1 Homo sapien...	Difference experiment 1 h vs. experiment 12 h
W90037	zh69f11.s1 Soares fetal liver spleen 1NFLS S1 Homo sapien...	Difference experiment 1 h vs. experiment 12 h

☒ Difference

☐ Variance

☐ Distance

☐ Cluster

☐ Correlation

☐ Classification

☐ Profile

☐
☒ Projects

☐ Bertrand

☐ Antoine

☐ Angela

☐ Pierre

☐ fibroblast data

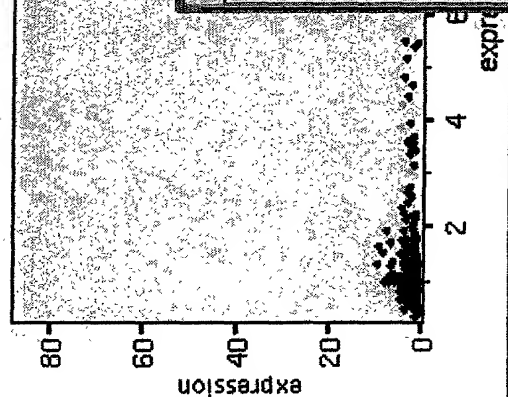
☐ sebastian

☐ Imogene data

☐ Fibroblast Project

☐ All data

Tree representation
with selection in views


☒ OR

☐ AND

Tree View of All data

W73148
AA055549
AA045715
N98591
N99070
W98037
AA055585
W88507
AA016304
AA013396
N23941
T70079
AA057826
AA026120
W42606
AA021163

☒ Difference experiment 1h vs. experiment 12h

☒ T95837

Gene	Description	Selected in
W47101	zc39b04.s1 Soares senescent fibroblasts NbHSF Homo sapi...	Difference experiment 1h vs. experiment 6h
W86798	zh64c06.s1 Soares fetal liver spleen 1NFLS S1 Homo sapien...	Difference experiment 1h vs. experiment 6h
R21877	yh22c10.s1 Homo sapiens cDNA clone 130482 3'.	Difference experiment 1h vs. experiment 6h
R34833	yh86a04.s1 Homo sapiens cDNA clone 136590 3' similar to...	Difference experiment 1h vs. experiment 6h
AA044235		
R77289		
AA047266		
H11003	ym07d01.s1 Homo sapiens cDNA clone 47359 3' similar to ...	Difference experiment 1h vs. experiment 6h
AA057359		

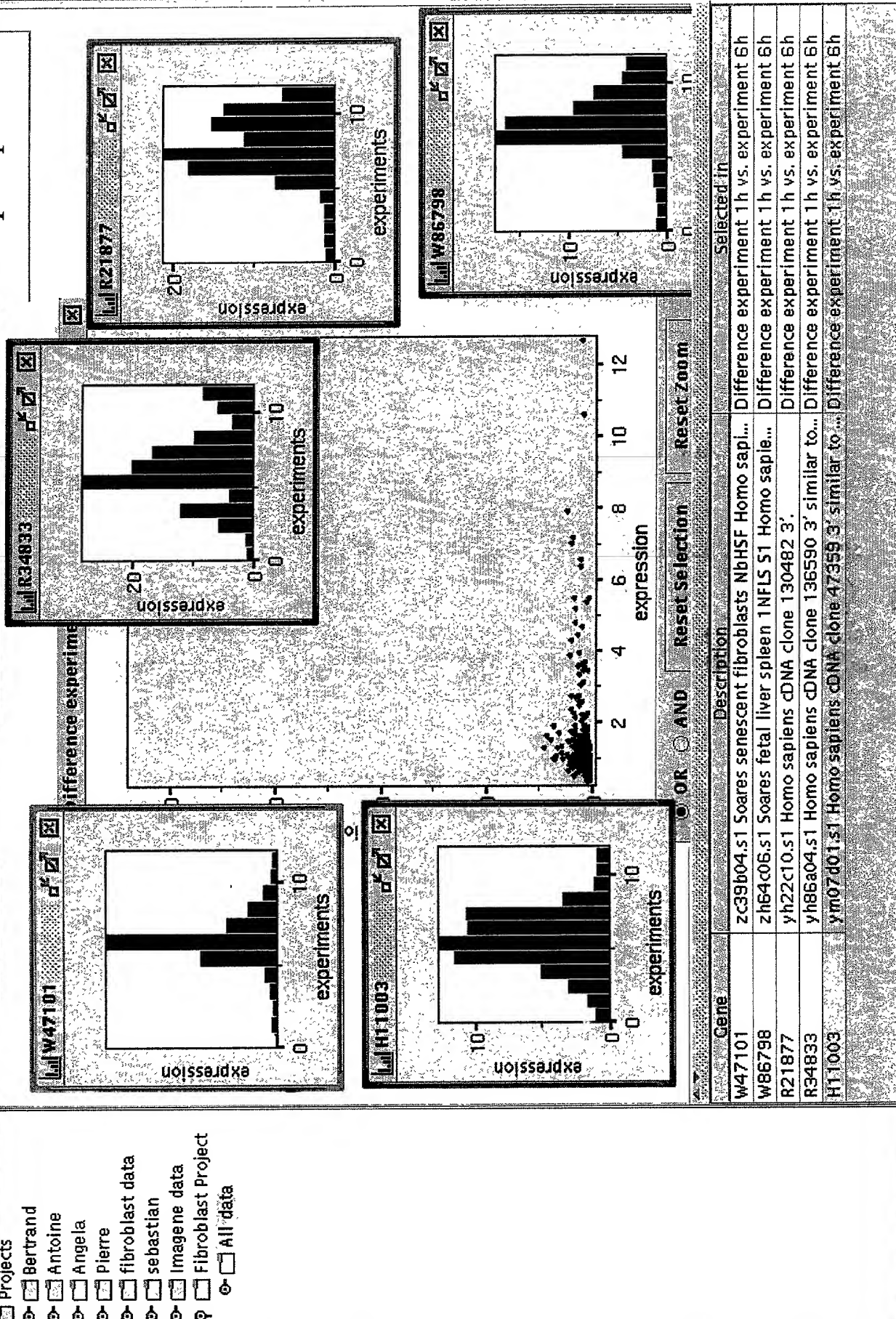
File Edit Analysis Genes Help

☐ Difference ☐ Variance ☐ Distance ☐ Correlation ☐ Classification ☐ Profile ☐ SRS ☐ bit

Projects

- ☐ Bertrand
- ☐ Antoine
- ☐ Angela
- ☐ Pierre
- ☐ fibroblast data
- ☐ sebastian
- ☐ Image ne data
- ☐ Fibroblast Project
- ☐ All data

Compare profiles



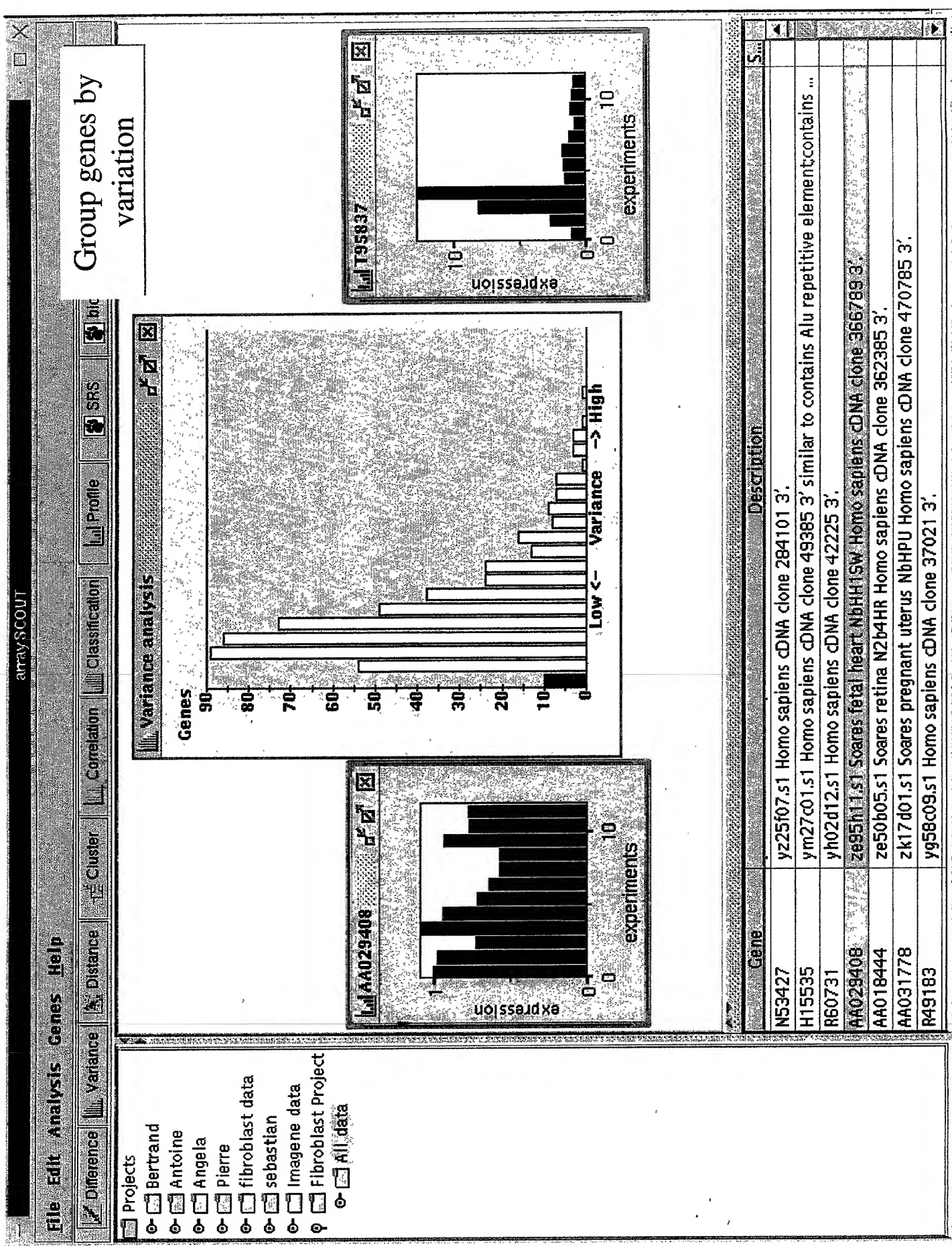


FIG. 70

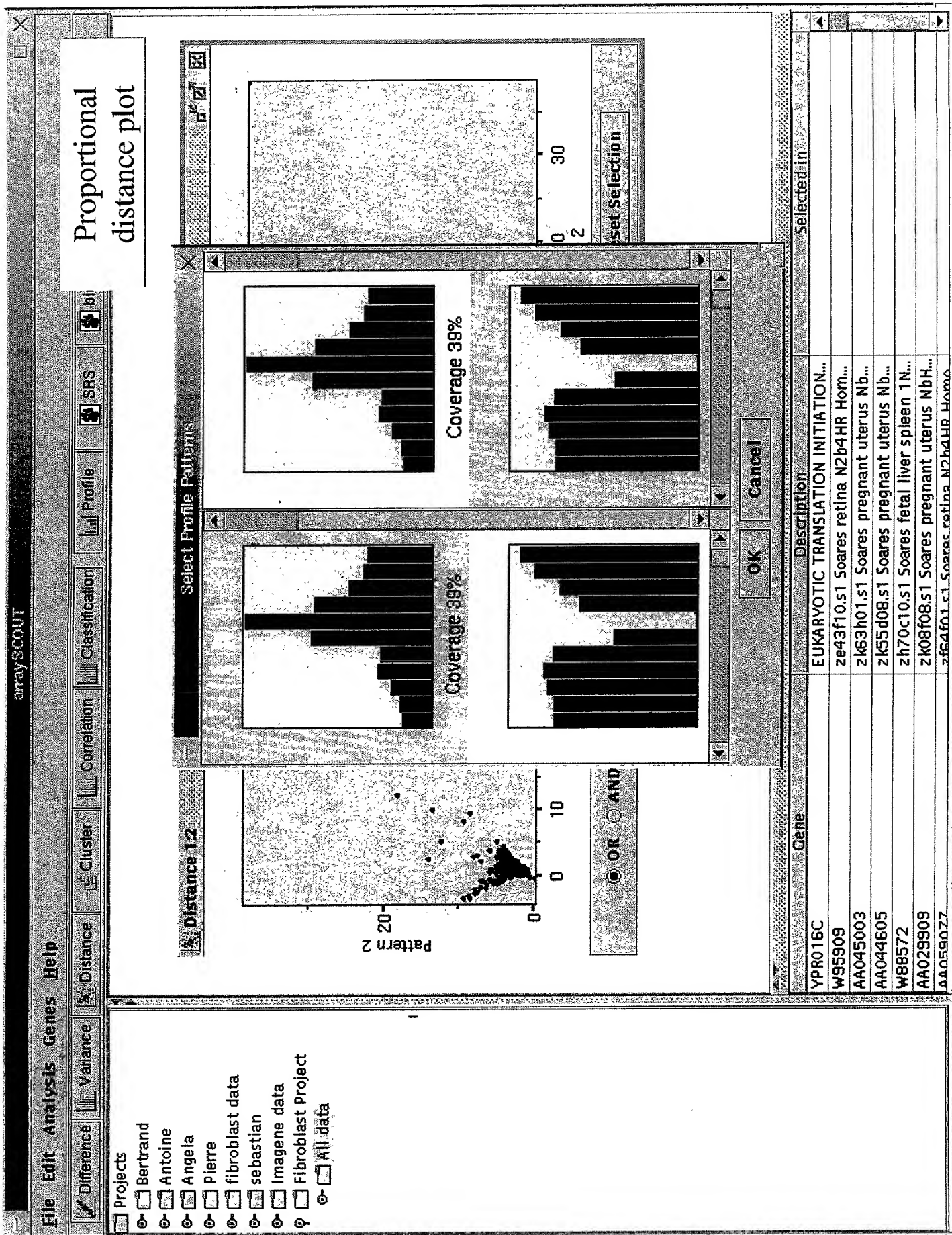


FIG. 71

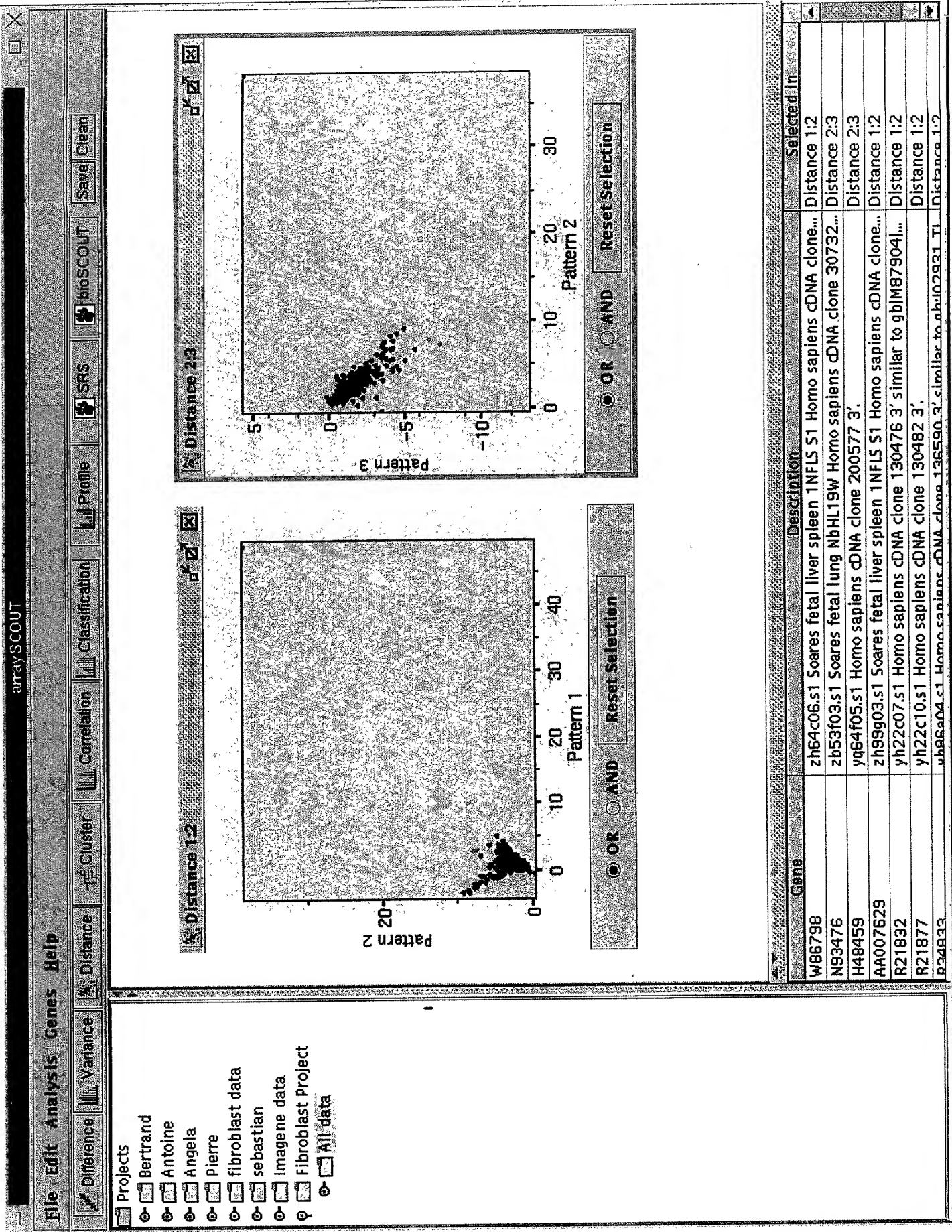


Fig. 72

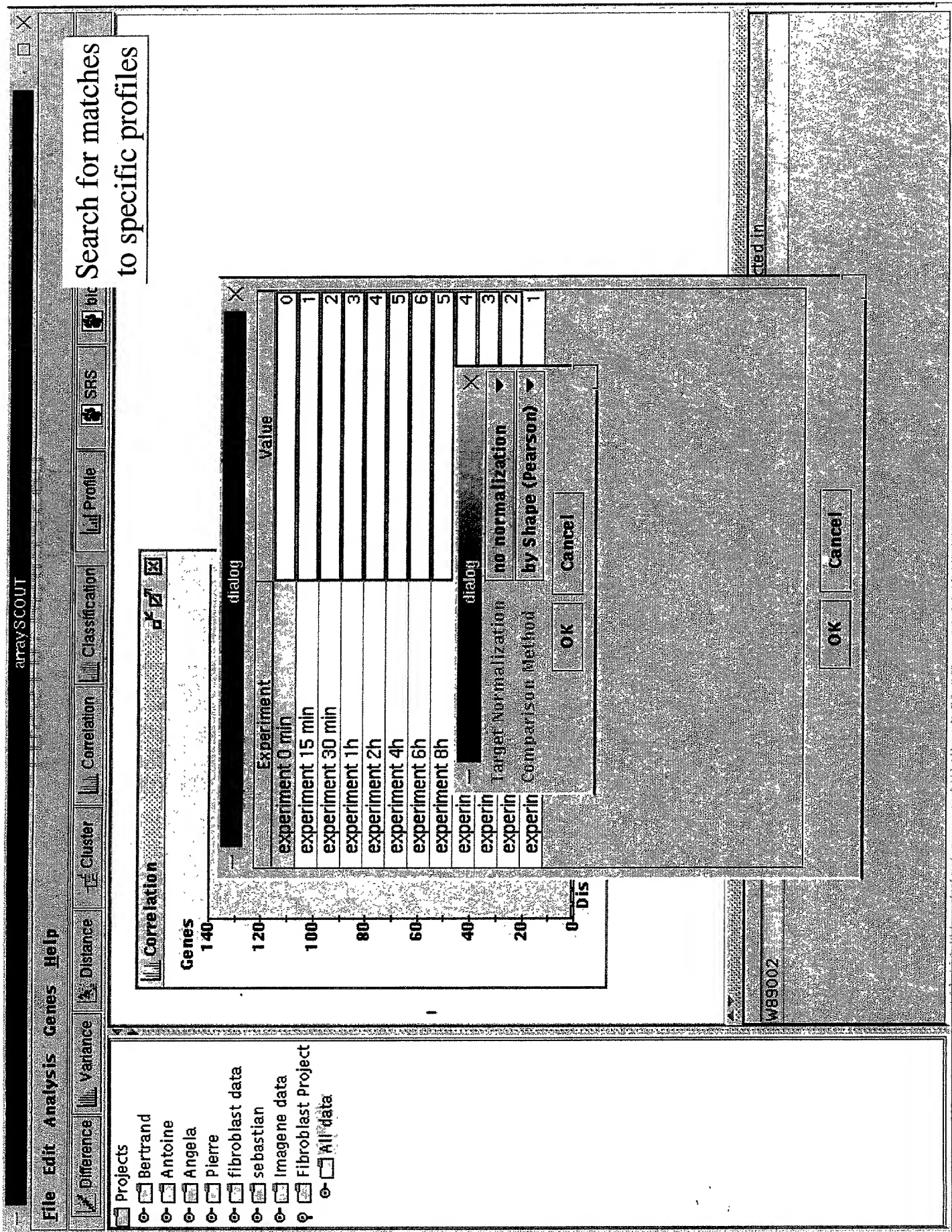


Fig. 73

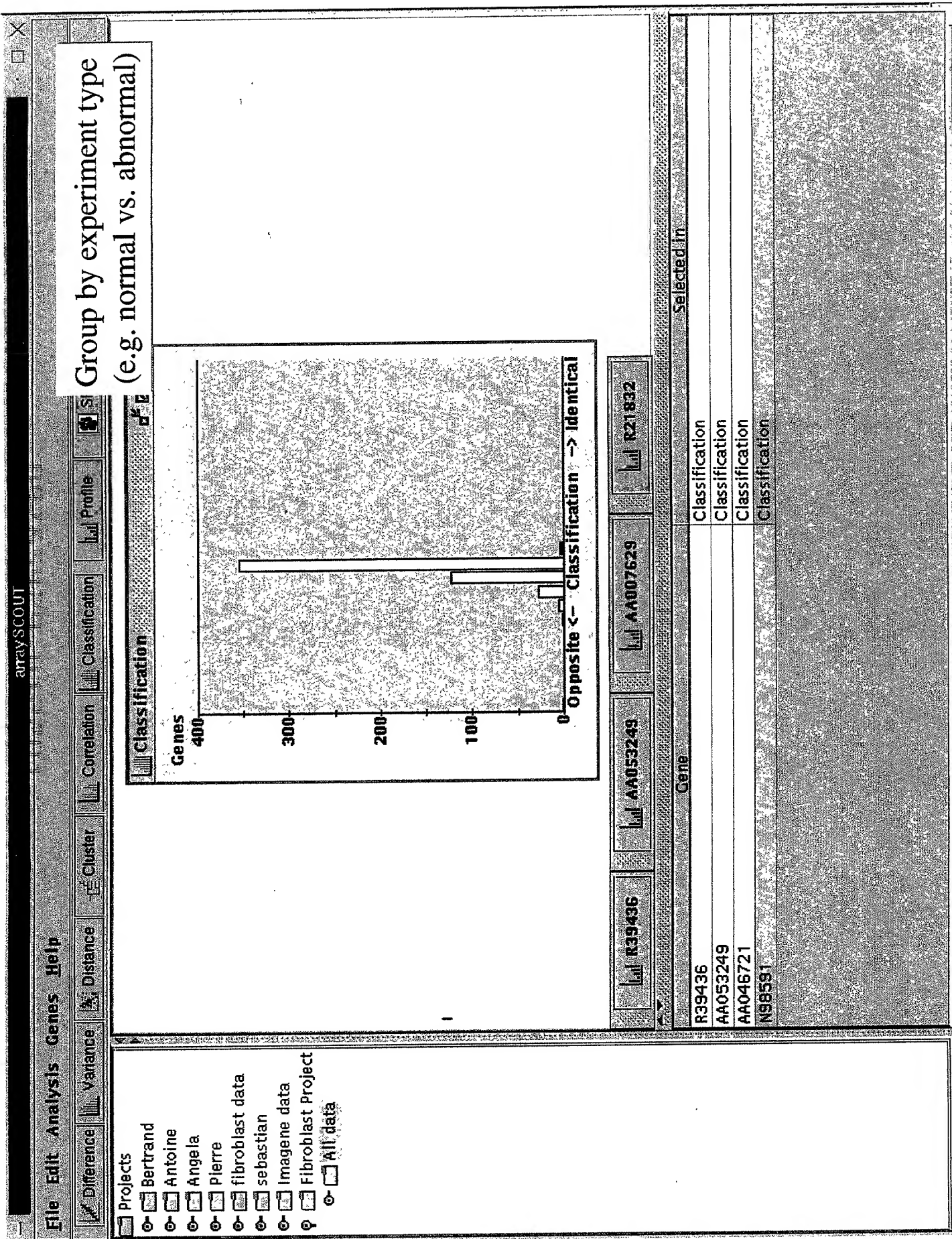


Fig. 74

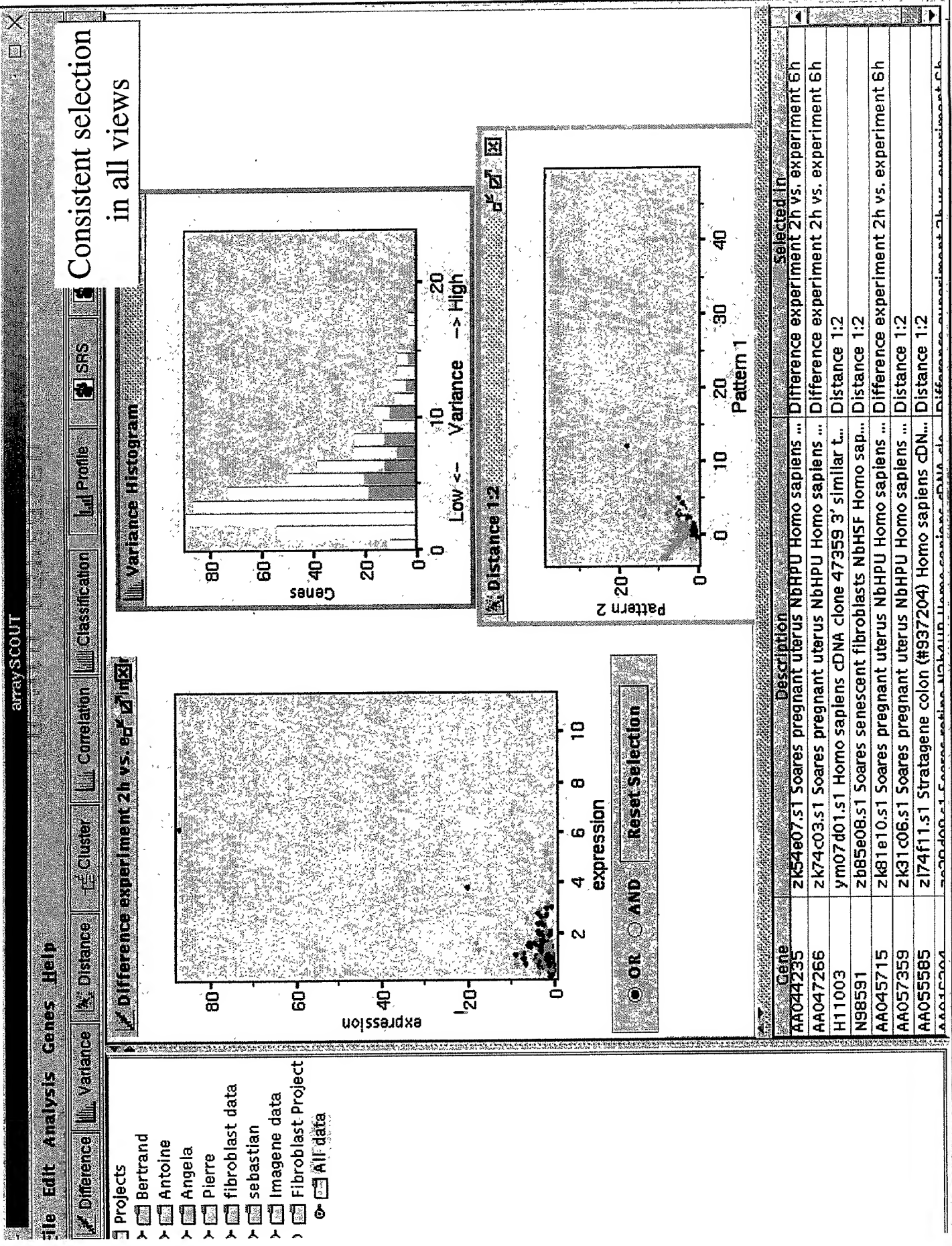


Fig. 75

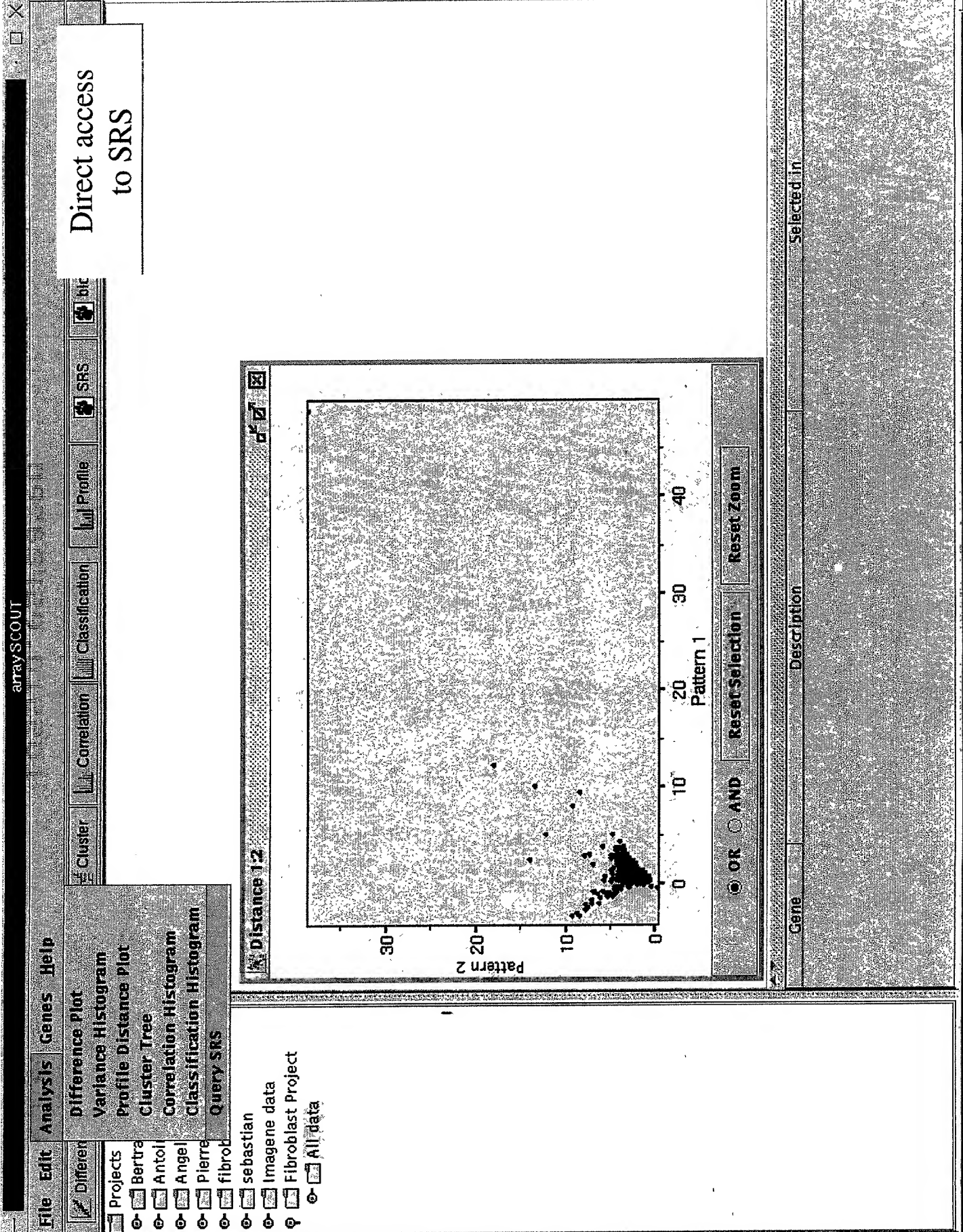


Fig. 76

SRS queries can be easily constructed using this interface

Projects

- ☒ Bertrand
- ☒ Antoine
- ☒ Angela
- ☒ Pierre
- ☒ fibroblast data
- ☒ sebastian
- ☒ Image data
- ☒ Fibroblast Project
- ☒ All data

SRS

QT

- ☒ all dbs
- ☒ SeqRelated
- ☒ Protein3DStruct
- ☒ Sequence
- ☒ Mutations
- ☒ TransFac
- ☒ Mapping
- ☒ Metabolic Pathways
- ☒ Others

Gene	Description	Selected in
W86798	zh64c06.s1 Soares fetal liver spleen 1NFLS...	Distance 1:2
R21877	yh22c10.s1 Homo sapiens cDNA clone 130...	Distance 1:2
R34833	yh86a04.s1 Homo sapiens cDNA clone 136...	Distance 1:2
H11003	ym07d01.s1 Homo sapiens cDNA clone 47...	Distance 1:2

arraySCOUT

File

Edit

Analysis

Genes

Help

Difference

Variance

Distance

Cluster

Correlation

Classification

Profile

SRS

bioSCOUT

Projects

Bertrand

Antoine

Angela

Pierre

fibroblast data

sebastian

Imagene data

Fibroblast Project

All data

SRS

Stop

Simple mode

Submit

Deselect

Q1

SeqRelated

PROSITE

DOMO

PFAMB

PFAMSEED

ENZYME

UNIGENE

UNISEQ

INIEST

PROSITEDOC

PFAM

SWISSPFAM

TAXONOMY

DBEST

RNUNIGENE

RNUNISEQ

RNINIEST

BLOCKS

PFAMA

PFAMHMM

GENETICCODE

DBESTNEW

MMUNIGENE

MMUNISEQ

MMINIEST

All Entries

SeqCount

SequenceAcc

NID

PID

Clone

Library

End

All Entries

+

-

Back

Forward

Link to any database

Gene	Description	Selected in
R21877	zh64c06.s1 Soares fetal liver spleen 1NF1S...	Distance 1:2
R34833	yh22c10.s1 Homo sapiens cDNA clone 130...	Distance 1:2
H11003	yh86a04.s1 Homo sapiens cDNA clone 136...	Distance 1:2
	ym07d01.s1 Homo sapiens cDNA clone 47...	Distance 1:2

Fig. 28

Link again for
specific query
e.g. cytokine

Projects

 Bertrand

Antoine

Angela

Pierre

fibroblast data

sebastian

ImageNet data

- **ImageNet** dataset
- **Fibreblast Project**

SecRelated

 Protein3DStruct

Sequence

EMBL

CONFIDENTIAL

30111010135

三

 TREMBL NEW

TREMBL

NAGENESE

 GENBANK


SWISSAIR

THE

SP1REMBL

CENPEPT

SPTREMBLNEW

 GENBANK

SWISSAIR

DECEMBER 1991

WANG ET AL.

REMI REML

GENPEPTNEW

AAGENESEQ

AllText

cytokine

Gene	Description	Selected in
w86798	zh64c06.s1 Soares fetal liver spleen 1NFLS...	Distance 1.2
R21877	yh22c10.s1 Homo sapiens cDNA clone 130...	Distance 1.2
R34833	yh86a04.s1 Homo sapiens cDNA clone 136...	Distance 1.2
H11003	ym07d01.s1 Homo sapiens cDNA clone 47...	Distance 1.2

Results displayed

Projects

- ☐ Bertrand
- ☐ Antoine
- ☐ Angela
- ☐ Pierre
- ☐ fibroblast data
- ☐ sebastian
- ☐ Image data
- ☐ Fibroblast Project
- ☐ All data

SRS

Stop

Simple mode

Submit

Q1 -> Q2

- ☐ SeqRelated
- ☐ Protein3DStruct
- ☐ Sequence

- ☐ EMBL
- ☐ GENBANKNEW
- ☐ PIR
- ☐ TREMBLNEW
- ☐ TREMBL
- ☐ EMBL
- ☐ SWISS
- ☐ SPTR
- ☐ GENP
- ☐ SPTR

AllText

Cytokine

function subglf(form, addE) { form.elements.length-1];

+ Complete entries *

SWISSPROT:SY02_HUMAN

ID SY02_HUMAN STANDARD; PRT; 99 AA.

AC P13500;

DT 01-JAN-1990 (Rel. 13, Created)

DT 01-JAN-1990 (Rel. 13, Last sequence update)

DT 15-JUL-1999 (Rel. 38, Last annotation update)

Gene	Description	Selected in
Y20H1.1.s1	Homo sapiens cDNA clone 67...	SRS
ZH64C06.s1	Soares fetal liver spleen 1NFLS...	Distance 1:2
YH22C10.s1	Homo sapiens cDNA clone 130...	Distance 1:2
YH86A04.s1	Homo sapiens cDNA clone 136...	Distance 1:2
YH07D01.s1	Homo sapiens cDNA clone 47...	Distance 1:2

Fib. 80

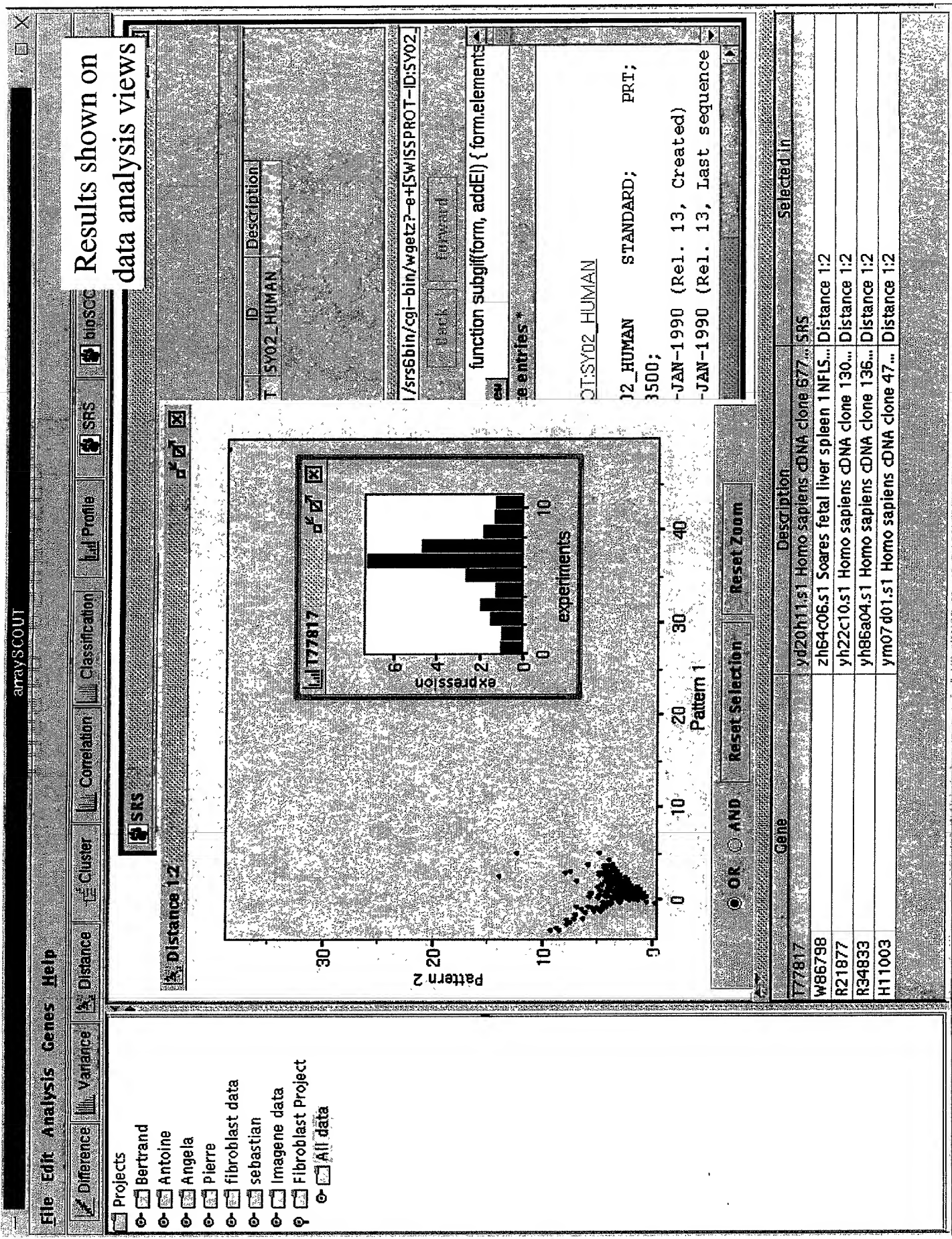


Fig. 81

File Edit Analysis Genes Help

Distance Variance Cluster Correlation Classification Profile SRS BUSCOUT Save Clean

Projects

Bertrand
Antoine
Angela
Pierre
fibroblast data
sebastian
Imagene data
Fibroblast Project
All data

SRS

STOP
Simple mode
Submit
Deselect

all dbs
SeqRelated
Protein3DStruct
Sequence
Mutations
TransFac
Mapping
Metabolic Pathways
PATHWAY
Others
LENZYM

Distance 12

Pattern 2
Pattern 1

OR AND
Reset Selection

Refer back to analyses

Num

Db

ID

Description

1 PATHWAY map00020
2 PATHWAY map00030
3 PATHWAY map00220
4 PATHWAY map00720

http://bsserver1/srs6bin/cgi-bin/wget2?-e+PATHWAY-ID:map00020

Back Forward

Pyruvate
Phosphoenolpyruvate
Pyruvate
Lysine degradation
Glycolysis / Gluconeogenesis

Acetyl-CoA
Citrate
Fatty acid biosynthesis (path1)
Fatty acid biosynthesis (path2)
Fatty acid metabolism

Gene	Description	Selected in
W15407	zc18e07.s1 Soares parathyroid tumor NBHPA Homo sapiens cDNA clone 3226...	SRS
W85798	2h64c06.s1 Soares fetal liver spleen 1NF1S S1 Homo sapiens cDNA clone 416...	Distance 1:2
W84538	zd89b10.s1 Soares fetal heart NBH19W Homo sapiens cDNA clone 358635 3'	SRS
N35315	yy22c05.s1 Homo sapiens cDNA clone 27-976 3' similar to gb:L07548 AMIN...	SRS
R21877	yh22c10.s1 Homo sapiens cDNA clone 130482 3'	Distance 1:2
AA058324	z167b02.s1 Stratagene colon (H937204) Homo sapiens cDNA clone 509643 3'...	SRS
R34833	yh6a04.s1 Homo sapiens cDNA clone 136590 3' similar to gb:J02931 TISU...	Distance 1:2
H11003	ym07d01.s1 Homo sapiens cDNA clone 47359 3' similar to gb:S56805 ENDO...	Distance 1:2

Fig. 82

Link to pathway
information

SRS

Stop

Simple
mode

Submit

Deselected

- Projects
- ☐ Bertrand
 - ☐ Antoine
 - ☐ Angela
 - ☐ Pierre
 - ☐ fibroblast data
 - ☐ sebastian
 - ☐ Image data
 - ☐ Fibroblast Project
 - ☐ All data

- all dbs
- ☐ SeqRelated
 - ☐ Protein3DStruct
 - ☐ Sequence
 - ☐ Mutations
 - ☐ TransFac
 - ☐ Mapping
 - ☐ Metabolic Pathways
 - ☒ PATHWAY
 - ☐ Others

LENZYME

http://bsserver1/srs6bin/cgi-bin/wget2?-e+PATHWAY-ID:map00020

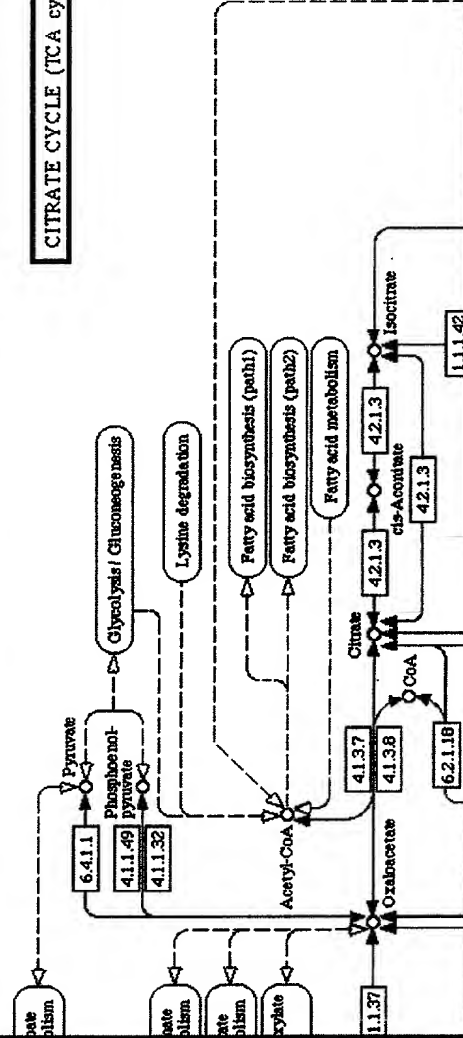
Back Forward

dard metabolic pathway

way

Enzyme

CITRATE CYCLE (TCA cycle)



Gene

Description

Selected in

W15407	zc1Be07.s1 Soares parathyroid tumor NBHPA Homo sapiens cDNA clone 3226...	SRS
W86798	zh64c06.s1 Soares fetal liver spleen 1NF15.S1 Homo sapiens cDNA clone 416...	Distance 1:2
W84538	z089b10.s1 Soares fetal heart NBHHT5W Homo sapiens cDNA clone 356635 3'	SRS
N35315	yy22c05.s1 Homo sapiens cDNA clone 271976 3' similar to gb107548 AMIN...	SRS
R21877	yh22c10.s1 Homo sapiens cDNA clone 130482 3'	Distance 1:2
AA058324	zh67b02.s1 Stragene colon (#937204) Homo sapiens cDNA clone 508643 3'...	SRS
R34833	yh86a04.s1 Homo sapiens cDNA clone 136590 3' similar to gb102931 TISSU...	Distance 1:2
H11003	ym07d01.s1 Homo sapiens cDNA clone 47359 3' similar to gb556805 ENDO...	Distance 1:2

Fig. 83